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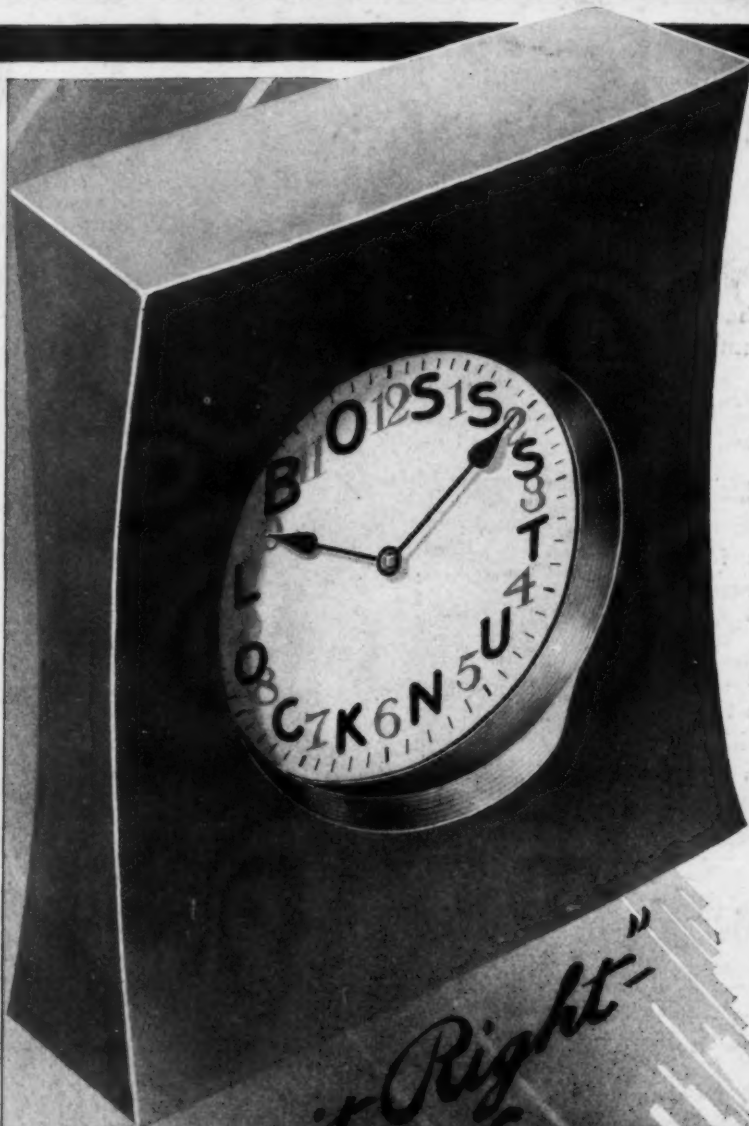
Railway Age

SECOND HALF OF 1924—No. 25

NEW YORK—DECEMBER 20, 1924—CHICAGO

SIXTY-NINTH YEAR

Published Weekly by Simmons-Boardman Pub. Co., 30 Church St., New York, N. Y. Subscription Price U. S., Canada and Mexico, \$6.00; foreign countries (excepting daily editions), \$8.00, and \$10.00 a year including all dailies; single copies, 25c. Entered as second-class matter January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.



*"Write it Right—"
BOSS
Lock Nuts!*

A Timely Topic

Retrospection and Anticipation

As the New Year approaches, it is but natural to review the past and plan for the future.

Looking back, do you feel that you did everything possible for the safety of the traveling patrons of your road and the safe, speedy transportation of cargo?

Looking ahead, are you going to make sure that all bolted parts—on all equipment—are made absolutely secure against loosening by applying Boss Lock Nuts? If so, you may anticipate no trouble from missing nuts and loosened bolts.

A good resolution—for all who have not already done so—would be to make Boss Lock Nuts standard on all railway and industrial equipment.

American Bolt Corporation
BOSS NUT DIVISION
1132-34 North Kolmar Avenue
CHICAGO - U-S-A

LEZZIER
AD-SERVICE
CHICAGO



*You wouldn't carry your valuable tires
this way, would you?*

Automobile tires and freight car hand
brakes are necessary adjuncts to the auto-
mobile and freight car, respectively.

They both cost real money.

There is no more reason for carrying a hand
brake which will eventually be removed or
knocked off in service than there is for
carrying tires in the fashion illustrated
above.

We do not know the name of a good tire
holder, offhand, but we can tell you the
name of a flat car hand brake which
will meet all conditions in flat car serv-
ice and which will "stay put" in both
raised and lowered position.



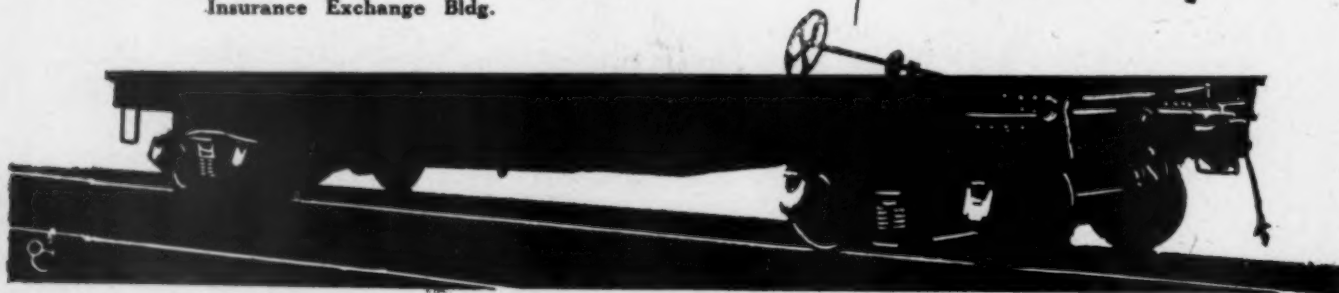
**URECO
DROP
BRAKE
SHAFT**

UNION RAILWAY EQUIPMENT CO.

McCormick Bldg.
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Montreal: Hope E. Scott & Co., Ltd.
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*Then why do
this?*



EDITORIAL

Railway Age

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Cleaning Passenger Cars

Cleaning railway equipment, particularly passenger cars, is one of the relatively minor operations performed by mechanical department employees and chargeable to transportation expense which in the course of a year aggregates many dollars of cost to the railroads. It also has an important influence for good or ill on public sentiment dependent upon how thoroughly the cleaning operation is performed on the respective roads. The subject of passenger car cleaning has been given considerable space in an article entitled, "Securing Effective Car Department Service," by L. K. Sillcox, general superintendent of motive power of the Chicago, Milwaukee & St. Paul, which began on page 1,075 of the December 13 issue of the *Railway Age*. This article indicates the need of a thorough study of each train movement with the idea of developing a cycle of cleaning which will produce satisfactory results at the least cost. With information developed by these studies it is possible to assign to each coach yard or cleaning station its measure of work to be done. Anything necessary above this basic program must be taken care of in the interests of the service, a full explanation being subsequently made and frequently bringing out some avoidable condition in handling equipment which is proving costly. Sometimes it is found that the work is not being handled properly at a certain point, or possibly cars are being cleaned too frequently. In one case of an important train having a dining car as well as a parlor car operated a distance of 85 miles, it was the practice to clean these cars at both ends of the run. Yet it was not unreasonable to think that this equipment, regardless of how popular the train might be, ought to make the round trip of 170 miles with one cleaning. Necessary arrangements were made to have all the cleaning done at one terminal and the expense saved for each round trip amounted to \$11 a day on this one train for two cars. In view of the possibilities of saving, a constant check should be kept on passenger car cleaning, and the cycle of cleaning and methods used reviewed in detail probably at least as often as every six months.

The superintendent who gives due heed to his duty to maintain the discipline of trainmen at the highest possible

Potential Collisions and Penalties

standard usually includes as a cardinal principle of his scheme, or at least as an ideal, the penalizing of men for potential collisions as surely, and perhaps as severely, as for actual collisions. An engineman who runs past a meeting point and yet gets off without causing a dollar's damage is in exactly the same class as the engineman who makes that kind of mistake and kills a dozen passengers. It is not easy at all times to stick to such a rigid rule of discipline, but everybody recognizes the soundness of the theory. This thought comes to mind in connection with the Interstate Commerce Commission's fourth "supplemental" report, abstracted on another page, which covers a collision that occurred 14 months since. By faulty block signaling a passenger train and a freight met each other on the main track; one man was killed and 26 persons were injured. The Bureau of

Safety now finds that the bad practice that was condemned in 1923 still prevails at that place; and that no change is contemplated. In other words the responsibility of the management in the affair (as distinguished from that of the engineman and the conductor) remains just where it was; the existing conditions produced a collision in 1923; and the same conditions possess the same possibility in 1924. The government penalizes railroads, in cases of this kind, only so far as to investigate and give the facts to the public. As to what extent the railroad penalizes the trainmen, the public is not informed. In the most serious collisions the employee responsible is usually dismissed. The extreme penalty imposed by the Interstate Commerce Commission on the management for a notable collision is a series of public hearings, as distinguished from the ordinary procedure of printing a report of an investigation which has been made without nation-wide publicity. (The government, through the instrumentality of the courts, may in any case impose a heavy money penalty in the shape of verdicts in damage suits.) Making the facts public a second time, as has now been done in four cases, is a step in advance. The engineman (if he does not lose his job) always has the opportunity to forestall a second punishment by improving his habits; by striving to make his everyday conduct measure up to the highest possible standards. The present report suggests that the management, likewise, has an opportunity; having been censured twice, it may avoid being censured a third time.

With the possible exception of rates and service there is no point of contact between the railways and the public which

deserves more serious thought than that presented by the highway grade crossing. Expression is frequently given to the thought that the only effective cure for the disease lies in a

Resist the Opening of New Grade Crossings

major operation—grade separation. Enthusiasts for this plan are in no wise discouraged by demonstration of the herculean financial problem which it imposes and suggest schemes for the lending of public credit for the encouragement of such work but disregard entirely the fundamental fact that no matter how the money is raised the public must pay for it either in the form of taxation or higher transportation costs. But as if the problem were not bad enough, it is constantly being made more difficult by the opening of new grade crossings over the tracks, primarily, it would seem, at the instance of those concerned with the promotion of local real estate projects. Whatever the cause, the effect has been to offset very largely the enormous expenditures which are being made for grade crossing elimination. For example, during 1922 when 705 grade crossings were eliminated, 4,560 new crossings were opened. This presents an exceedingly unfortunate situation. Not only does it intensify the difficulties attending any general program for grade separation but it imposes an ever-increasing burden on the railroads for grade crossing protection, the magnitude of which is illustrated by the fact that one middle western road now spends \$1,000,000 annually for the wages of crossing gatemen and watchmen. These demands for new grade crossings must be resisted energetically by the railroads. Judging from the tenor of the discussion of the grade cross-

ing problem at the convention of the National Association of Railroad and Utilities Commissioners at Phoenix, Ariz., the state commissions, as a whole, are definitely opposed to the opening of new grade crossings and should lend a willing ear to arguments offered by the carriers in opposition to such projects. One complication brought to light in the discussion at Phoenix is the seeming lack of co-operation between the highway and the public utility authorities in the various states. Cases were cited where the highway commissions have proceeded with plans and actual construction on highways in locations requiring the construction of grade crossings, but without appraising the railroad commissioners of the need of crossings until plans had been carried too far to permit of a change. Railway officers should be on the alert to forestall plans of this kind and file protests before the work has gone too far. Every new crossing offers not only the prospect of immediate added expense for protection but presents serious potentialities in the form of another non-revenue producing investment in grade separation.

What Do You Read?

UNDER PRESENT conditions successful work by a railway officer, whatever his rank in the service, requires that he shall have both expert knowledge of the problems and duties of his own department and also a broad knowledge of the problems of other departments. Every railway officer comes more or less in contact with both the employees and the patrons of the railways. To render the best possible service to his company he should be prepared to give information to employees and patrons regarding the situation of his own railway and of the railways as a whole, and to discuss intelligently with them the problems that are of mutual interest to the railways, on one hand, and their employees and patrons on the other.

The *Railway Age* is published primarily to be practically useful to railway officers in their work—to give to specialists in each branch of the service information regarding the latest important developments in their own fields and also to furnish to all classes of officers general information regarding the railway situation as a whole and the broad problems of the industry which every railway officer ought to have.

It is an old saying that "He that tooteth not his own horn, verily the same shall not be blown." Modest as the *Railway Age* is, it feels at times under the painful necessity of emphasizing to its readers the character and variety of its editorial contents. Any hesitation we feel about doing this is removed by the fact that the contents of the paper do not include merely the lucubrations of the members of its own staff, but consist mainly of information given and views upon railroad problems expressed by the leaders in all branches of the industry.

Mr. Railway Officer, what do you want to read about railway matters? Upon what questions and problems do you want information? Whatever your answer is we venture to say that you can find much of what you want in every issue of this paper. Do you think this is vain boasting and boasting for ourselves? If so, turn to the pages of an ordinary typical issue of the *Railway Age*—the issue for last week, dated December 13.

Are you interested in questions regarding the relations of the railways with the public and the government? That issue contained a summary of an address by W. H. Finley, president of the Chicago & North Western, pointing out why the railroad problem is an economic rather than a political one; an article regarding the railroad legislation that is being considered in Washington; a report of a discussion on the future of American railways before the Economic Club

of New York which was participated in by A. P. Thom, general counsel of the Association of Railway Executives; W. N. Doak, vice-president of the Brotherhood of Railroad Trainmen; R. H. Aishton, president of the American Railway Association, and H. G. Taylor, until recently president of the National Association of Railway and Public Utilities Commissioners. It contained also a report of addresses on the railroad problem made at the annual dinner of the Railway Business Association and an editorial pointing out why a policy approximating private management is being substituted for government management on the Indian railways.

Are you interested in the question of railroad consolidations? The same issue contained the Winslow bill, which has been introduced in Congress to provide for voluntary consolidations, and an article on the subject by F. J. Lisman.

Are you primarily interested in the problems of the mechanical department? This issue contained an extensive abstract of a paper by L. K. Sillcox, general superintendent of motive power of the Chicago, Milwaukee & St. Paul, on the work of the car department; an address by President Loree of the Delaware & Hudson on the significance of steam locomotive development as illustrated by this road's new locomotive which is designed for a boiler pressure of 350 lb. per square inch; and an article on straight line passenger car repairs by Lawrence Richardson.

Are you interested primarily in engineering and maintenance matters? This issue contained an article regarding numerous improvements designed to increase efficiency, safety and economy which have been installed in the Southern Pacific's new timber treating plant at Wilmington, Cal.

Are you primarily interested in operating matters and the ways in which efficiency of operation is helping to solve the financial problems of the railroads? This issue contained an editorial pointing out the large increase in net operating income that is occurring and the increases in efficiency of operation by which this result is being brought about; an editorial regarding the "Heavier Loading of Cars"; an article giving the latest information about car loadings in the United States and Canada; and a report of a two-day conference held at Boston on the relations between the railways and motor vehicles and summarizing papers upon this subject presented by C. L. Bardo, general manager of the New Haven; Albert H. Swayne, vice-president of the General Motors Corporation; James M. Swift, president of the Interstate Limited Motor Coach Company, and G. C. Woodruff, general freight agent of the New York Central. It also contained an abstract of a paper by C. W. Price pointing out the dangerous slackening of interest in safety work that is occurring in American industry.

Are you primarily interested in the development of new sources of traffic? This issue of the *Railway Age* contained a report of the semi-annual meeting of the American Railway Development Association at which co-operative marketing, reforestation and other agricultural and industrial problems affecting the growth of traffic were discussed.

Are you primarily interested in labor problems? This issue contained an article by Dr. Henry Clayton Metcalf, director of the Bureau of Personnel Administration, summarizing and analyzing the views expressed regarding employee representation in the papers by 372 men that were entered in the *Railway Age's* recent competition on co-operation between managements and employees.

And there were other things in this issue. There was a report of the decision of the Interstate Commerce Commission regarding the acquisition of the Gulf Coast Lines by the Missouri Pacific System. In our news department information was given regarding the wages paid by the railways in September and regarding their revenues and expenses in October. There was a summary of the report of the committee on "Co-ordination of Rail and Steamship Activities" of which Secretary Hoover was chairman and which included

in its membership the chairman of the Shipping Board, the chairman of the Interstate Commerce Commission and President Willard of the Baltimore & Ohio.

We are doing our best to make the *Railway Age* what a railway paper ought to be. Do you read it? If it does not publish the kind of material you want write to us and tell us about our shortcomings. We want to be of real service to you and you are the best judge of just how we can best serve you.

The Vast Increase in Freight Business

THE TRUE and conclusive measure of the amount of freight service rendered by the railways is the number of tons carried one mile. Car loadings are a good but not absolutely accurate indication because they do not accurately reflect how many tons are loaded in each car and how far each ton moves. Since ton mileage is the true measure, it is interesting and significant that the number of tons carried one mile in October exceeded all previous monthly records. The previous high record was that for August, 1920, when the ton mileage was 42,700,000,000. The ton mileage in October, 1924, was 43,110,000,000. The increase over August, 1920, was only 1 per cent and over October, 1923, the record month of last year, only 2.1 per cent. Business in October did, however, break all records, and in view of the conditions under which and the way in which it was handled the railways deserve great credit for their performance.

When the previous high monthly record was set in August, 1920, the railways for months, except in April when the switchmen's strike interfered, had been handling the largest business they had ever had; and they had about 350,000 more employees than they had in October of this year. Nevertheless, in August, 1920, they had a car shortage of about 120,000 cars.

The big business of October, 1924, unlike that of August, 1920, was the result of a sudden and almost unprecedented increase. As recently as in July the number of tons carried one mile was only 32,000,000,000. The freight business of October was 35 per cent greater than that of July. Examination of the statistics indicates that this was relatively the largest increase that ever has occurred in any equal period except between midsummer and the fall of 1922 when the coal strike was settled; and the vast increase in business in the fall of 1922 resulted in a car shortage which lasted several weeks and reached a maximum of about 175,000 cars. Apparently the only other comparable increase in traffic occurred between midsummer and fall in 1915. The huge increase in traffic in the fall of this year, unlike that in 1922, was handled without congestion or car shortages and, in fact, throughout October the railways had approximately 5,000 serviceable locomotives in storage and an average of almost 100,000 surplus freight cars in good repair.

The facts show that the capital expenditures the railways have made within recent years have largely increased their capacity, and that, as has been repeatedly pointed out in these columns, there has been a great increase in the efficiency of operation.

The increase in the net operating income of the railways as a whole that resulted from efficient operation and this large increase in traffic already has been noted in these columns. It is interesting and significant to find that the increase in net operating income has been participated in by a large majority of the railways in all parts of the country. There are fifty railways whose gross earnings exceed \$25,000,000 annually and all but ten of these had a larger net operating

income in October than in the corresponding month of last year.

The large increases of traffic which occurred between midsummer and fall in 1915 and in 1924 were normal in the sense that they were not, like that which occurred in 1922, largely the result of the natural flow of traffic being for some months previously interrupted by strikes. The increase in the fall of 1915 was the fore-runner of an increase in 1916 which was relatively the largest that ever occurred in a single year and of a continued increase in 1917 and 1918. Those, however, were war years. Is, or is not, the recent vast increase of freight business a warning to railways and shippers to prepare for such an increase as occurred in 1916, 1917 and 1918?

Give More Attention to Lubrication

MANY ENGINE failures and train delays can be traced to inadequate lubrication caused by a poor quality of lubricants, improperly prepared bearings or man failures in the application of the lubricants. The penalty of costly delays and excessive maintenance costs constantly hovers over any railroad which relaxes even momentarily a program of ceaseless, critical attention to problems of lubrication. The interest of the operating department in efficient lubrication and fewer hot boxes is aptly summarized in the following sentences from a paper on lubrication recently read before the Pacific Railway Club by Dennistoun Wood, engineer of tests, Southern Pacific: "The delayed train is a thorn in the flesh of the operating or traffic man. Passenger trains chronically late are about as bad an advertisement as a railway can have. Delayed mails have to be avoided wherever possible. Late freight trains cause complaints, particularly if they are fruit or time freight trains. A delay to one train, no matter what its class, usually means delays to other trains."

In any attempt to secure adequate lubrication of railway equipment the necessary requirements of properly proportioned bearings and lubricating materials of such a character as to produce the desired results go hand in hand. Assuming that these fundamentals are provided, probably the greatest chance for improvement in present lubricating methods consists in developing organizations which will give constant care and attention to the minutest details of every operation in assembling bearings and applying the lubricants. When such organizations have been perfected it is a mistake to break them and lay off men at the first demand for a reduction in forces. Oilers, whether employed in car yards, shops or enginehouses, are too often considered non-productive labor. They are in reality, when properly trained and experienced, an important asset for any railroad.

Every precaution must be taken in handling the lubricating materials to see that they are kept free of grit and dirt. For example, of what value is it to turn and roll a car journal, apply a new brass and then fill the journal box with packing from a "dope bucket" which has stood around without a cover and accumulated a lot of foreign matter? At enginehouses driving box and rod grease is commonly provided in cakes which are particularly liable to accumulate dirt without constant care in handling. Hot crank pins, driving boxes and engine failures are the unavoidable results. A still further example of the detailed care necessary in the preparation of bearings and lubricating materials is afforded by the fact that in most locomotive designs the driving box crown brasses are provided with diagonal grease grooves, designed to assist in feeding lubricant over the entire area of the main journal bearings. In some cases

these grease grooves are formed by means of cores in the original brass castings. Experience has indicated, however, that these cored grooves cause cut journals and hot boxes owing to the practical impossibility of cleaning them of all core sand which works into bearings as the grease melts. Some roads have found it advisable to machine all holes or grooves in crown brasses to overcome this condition. This is but a single example of almost innumerable small details which must receive individual attention in order to insure effective lubrication of railway equipment.

Articles in December Railway Engineering and Maintenance

Kansas City Southern Adopts System of Numbering Buildings. Describes the method of identifying buildings, water tanks and all other structures except bridges, for purposes of record. Page 480.

How the Illinois Central Fights Snow in a Large Terminal, by J. J. Desmond, roadmaster, Illinois Central, Chicago. A description of the organization and equipment planned in advance to maintain operation in a busy terminal during severe storms. Page 483.

Is Winter Maintenance Work Practical? Articles by G. L. Moore, engineer maintenance of way, Lehigh Valley, and Philip George Lang, Jr., engineer of bridges, Baltimore & Ohio system, discuss extent to which improvement work can be carried on during cold weather. Page 490.

Books and Articles of Special Interest to Railroaders

(Compiled by Elisabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

The Boring Mechanism of Terebo, by Robert C. Miller. Describes "tool" of a marine borer. Univ. of Cal. pub. in zoology, v. 26, No. 4. 40 p. Pub. by Univ. of California, Berkeley, Calif.

"An Ounce of Prevention Is Worth a Pound of Cure." Safety and claim prevention activities on Baltimore & Ohio. 19 p. Pub. by Central Comm. on Public Relations, Baltimore & Ohio Railroad, Baltimore, Md.

Report of the Director of the Bureau of Safety to the Interstate Commerce Commission for the Fiscal Year Ended June 30, 1924. Safety appliances examined, and other data on safety on railroads, medals awarded, etc. 39 p. Pub. by Govt. Print. Off., Washington, D. C. 5 cents.

The Smithsonian Institution's Study of Natural Resources Applied to Pennsylvania's Resources, by Samuel S. Wyer. 1924 edition. Part III, "Transportation as a factor in economic development," contains photographs, maps, statistics, etc., on steam and electric railroads, waterways, and motor-buses. 182 p. Pub. at Columbus, O.

Statistical Abstract of the United States, 1923. Steam and electric railroad statistics, p. 385-418. See also Index under "Rails" and "Railroads." 878 p. Pub. by Govt. Print. Off., Washington, D. C. 85 cents (paper covers).

Periodical Articles

Army Transportation, by Marshall R. Pugh. "The backbone of army transportation is the standard-gage railroad," p. 497. *Military Engineer*, Nov.-Dec., 1924, p. 497-502.

Beyond the Purple Rim—Adventures in Abyssinia, by E. Alexander Powell. Pages 50 to 55 contain a non-technical description of the Franco-Ethiopian Railway, on which

tribal raids, and animals "prevent railroading in Abyssinia from becoming monotonous, but they also prevent good train service, for, as a consequence, trains are run only in the daytime." *Century Magazine*, November, 1924, p. 49-58.

Civilian Vocational Rehabilitation, by Reuben D. Cahn. What has been, and what ought to be accomplished in restoring those maimed in railroad and other industrial accidents. *Journal of Political Economy*, December, 1924, p. 665-689.

Electrically Operated Coal Pier, by R. W. McNeill. Western Maryland's new pier at Port Covington, Md. *Southwestern Engineer*, December, 1924, p. 40-44.

Feed, Don't Starve, Your Railroads, by Robert S. Henry. Costs of keeping up with traffic demands. *Nation's Business*, December, 1924, p. 42-44, 46.

Growth Curves and Railway Traffic, by Lervy E. Peabody. Primarily for statisticians. *Journal of the American Statistical Association*, December, 1924, p. 476-483.

The Story of the Rock Island, by Frank Nevins. Fourth article in series of histories of U. S. railroads. *Shipper & Carrier*, December, 1924, p. 4-9.

New Books

Transactions Index, Volumes 1 to 45, 1880-1923. 222 pages, 5 1/4 in. by 8 3/4 in., bound in half-morocco. Price \$3.00. Published by the American Society of Mechanical Engineers, New York.

This edition of the Index to Transactions is the fifth which has been published since the appearance, in 1880, of the first volume of the published literature of the Society.

In preparing the present index, the intention has been to cover as thoroughly as practicable the material hidden sometimes in irrelevant discussions and sometimes in the papers themselves, which, on account of its different subject-matter, would escape the attention of the searchers in an index devoted primarily to the major subjects of formal papers. The items have also been fully cross-referenced.

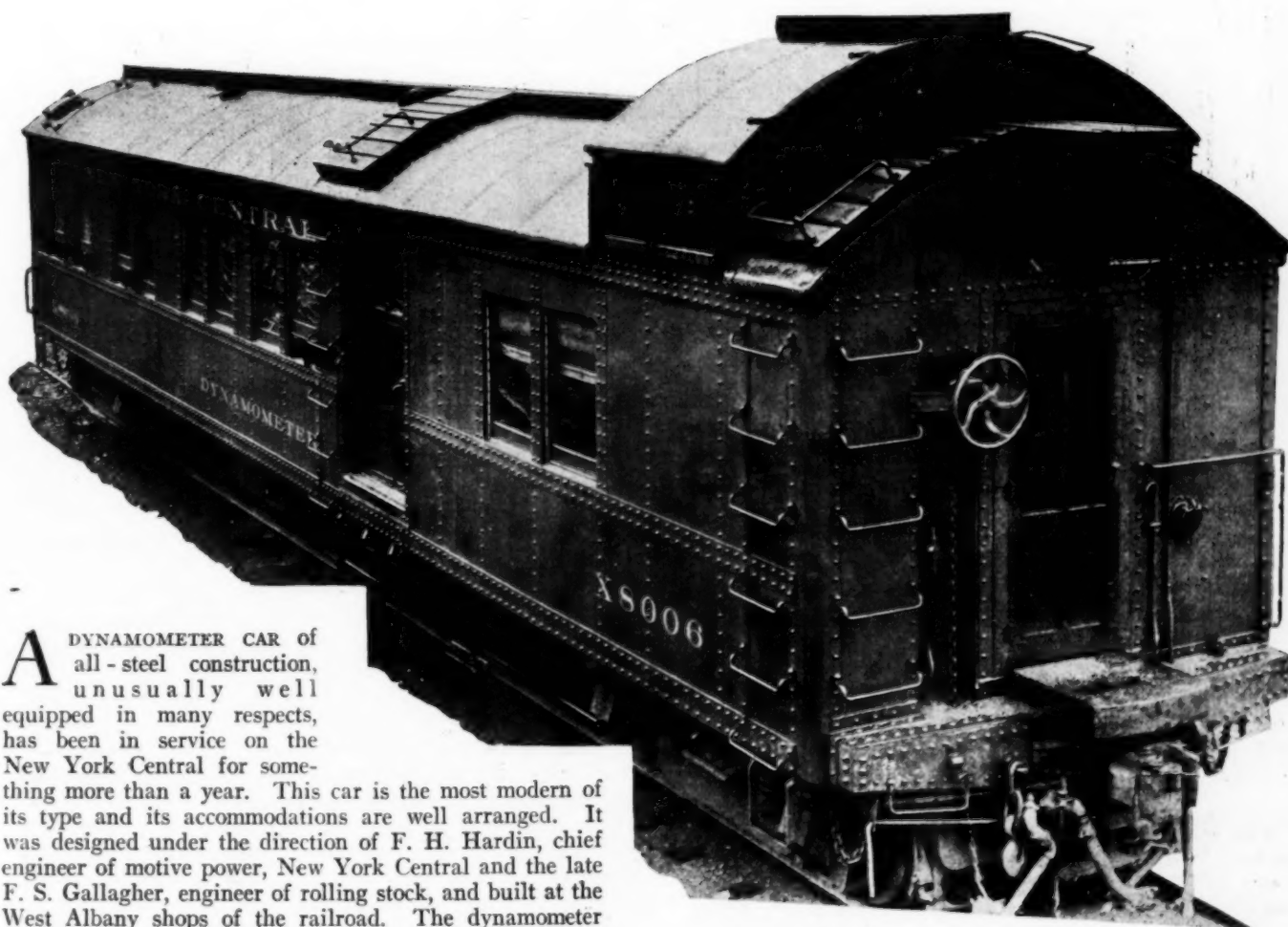
Inasmuch as the material in earlier volumes, to and including Volume 25, is quite completely indexed in Volume 27, the present index applies more particularly to Volumes 26 to 45, inclusive. It will be found, therefore, that the present index contains only a sufficient number of references to the first 25 volumes to locate the papers and their authors. No references to the discussers of these early papers are given, although such references are included in the general index of Volume 27.

Another difference in the present index lies in its arrangement. The general style of The Engineering Index has been followed, grouping alphabetically all items under authors' names and subjects, except memorial notices of deceased members, in the main section. No separate listing of authors or of papers in chronological order is attempted. References to purely Society affairs, such as accounts of meetings and addresses which do not deal with technical subjects, have been omitted. A separate index to memorial notices has been included.

A 10-MILE STRIP of land along the right of way of the Alaska Railroad, set aside so that its timber might be used for ties and bridges in constructing the government road, has been returned to the public domain by an executive order. With the practical completion of the road last year, it was found to be no longer necessary to reserve these lands, as the remaining timber on them is not needed. The timber is not of such character as to be available for tie replacements in the future. Another reason for no longer reserving these lands is to make them available for homestead settlement and other development under the general land laws. The public lands affected include areas five miles wide on each side of the railroad in the Matanuska, Susitna, Nenana River, and Goldstream valleys.

New York Central Dynamometer Car

Exceptional Facilities for Obtaining Complete Data and Information are Provided



A DYNAMOMETER CAR of all-steel construction, unusually well equipped in many respects, has been in service on the New York Central for something more than a year. This car is the most modern of its type and its accommodations are well arranged. It was designed under the direction of F. H. Hardin, chief engineer of motive power, New York Central and the late F. S. Gallagher, engineer of rolling stock, and built at the West Albany shops of the railroad. The dynamometer apparatus was designed, built and installed by the Burr Company, Champaign, Ill.

The car has an inside length of 52 ft. 2-7/16 in. and an inside width of 8 ft. 8 3/8 in. The dynamometer or office compartment occupies 21 ft. 6 3/4 in. of the length of the car, while the remainder is devoted to sleeping and dining accommodations for the crew. As shown in the drawing of the floor plan of the car, accommodations are provided for a crew of seven men and additional accommodations can be provided for two more if necessary. The berth and dining compartment is accessible from both the kitchen quarters and dynamometer compartments. When desired it can be isolated from either end by closing the doors between the sections. Ample toilet, lockers and wardrobe facilities make the car convenient and practical for carrying on the work for which it was designed.

One of the features incorporated into the design of the car is the 5/8-in. steel floor plate which extends over the entire dynamometer end of the car. This plate gives added strength to the frame and assists in taking the high stresses incidental to the measuring of the draw bar pull and buff. Another feature designed for facilitating the work of the crew is the work table which is supplied with reels, interchangeable with those on the chronograph table. It has an approximate length of 12 ft. which permits the operating crew to analyze at one time the record covering a consider-

able extent of track. Connections to the train air line and brake cylinders are located in close proximity to the chronograph table so that the gages can be easily read. Locomotive steam pressure is carried back to a gage which is also located over the chronograph table.

The Dynamometer Apparatus

The dynamometer has a capacity of 500,000 lb. maximum draw bar pull and a maximum buff of 1,000,000 lb. The apparatus provides facilities for taking 17 graphic records, two of which are for time intervals, which are recorded automatically and simultaneously on the traveling paper ribbon. There are also extra electric recording circuits which may be used for special records when desired. The traveling paper is sufficiently wide so that memoranda may be entered thereon in proper relation to the various graphic records, which are as follows: draw bar pull, draw bar buff, train speed, train line air pressure, locomotive steam pressure, brake cylinder air pressure, time intervals, position of the locomotive throttle, locomotive reverse lever position, location of track curves, grades, power delivered through the drawbar to the train, train location, distance traveled, time indicator cards were taken, time and amount of firing the locomotive, and provisions for three unassigned records.

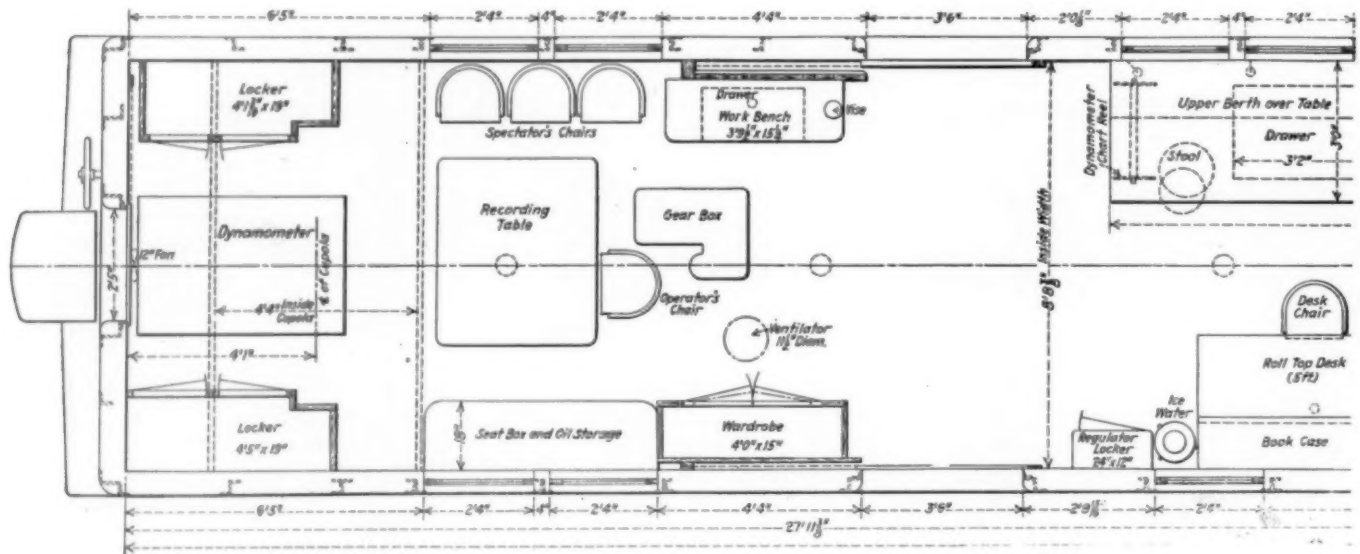
The dynamometer car recording equipment consists of a

diaphragm dynamometer, a recording machine, an electric system which includes only that used in connection with the recording apparatus and an axle drive transmission unit. The electrical equipment does not include that which is used in connection with the car proper.

The draw bar dynamometer consists of a standard draw

bar fitted with a special yoke connected to the dynamometer weighing head. The weighing head is designed to receive the full pull or buff from the draw bar and transmit the force by means of pistons to pressure cylinders. The forces are here converted into liquid pressure which is transmitted to the chronograph and automatically recorded in proper relation to the time and other records.

The chronograph makes all of the records simultaneously on the traveling paper ribbon without interference or space corrections, with the exception of the five magnet records,



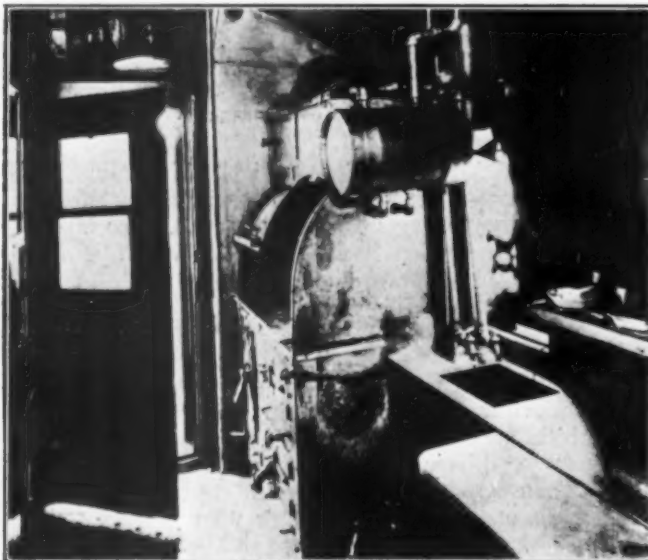
Floor Plan of the Dynamometer

bar fitted with a special yoke connected to the dynamometer weighing head. The weighing head is designed to receive the full pull or buff from the draw bar and transmit the force by means of pistons to pressure cylinders. The forces are here converted into liquid pressure which is transmitted to the chronograph and automatically recorded in proper relation to the time and other records.

The dynamometer weighing head is equipped with locking

which are placed back of the straight line chronograph record. The movement of the paper ribbon can be proportioned to the distance traveled or it can be run at a constant speed as desired.

Special pens are used for each chronograph recording instrument mounted on a rigid supporting arm which is controlled by the testing instruments. All the instruments, together with the indicating gages and magnet control cir-



Interior View of the Kitchen

devices for holding the pistons inactive so that the car may be moved in an inoperative condition. It is mounted on the 5/8-in. steel floor plate in a rigid position so that it can take and record the maximum pull and buff without vibration or damage from sudden shock. The weighing head is also equipped with limit alarms to insure the floating action of the pistons. Special indicators are used for recording

GENERAL DATA AND DIMENSIONS

Maximum draw bar pull.....	500,000 lb.
Maximum buff.....	1,000,000 lb.
Length, inside.....	52 ft. 2 1/2 in.
Length over platform end sills.....	55 ft. 0 1/2 in.
Length, center to center of trucks.....	42 ft. 5 in.
Truck wheel base.....	6 ft. 0 in.
Width over side sills.....	9 ft. 1 1/4 in.
Width over all at eaves.....	10 ft. 0 3/4 in.
Height, top of rail to the top of roof carlines.....	12 ft. 6 1/8 in.
Height, top of rail to the top of running board over cupola.....	14 ft. 8 in.
Height, top of rail to the top of floor.....	3 ft. 11 1/4 in.
Height, maximum, top of rail to center of coupler.....	2 ft. 10 1/2 in.
Height from underside of the side sill to the top of side plate.....	7 ft. 6 1/4 in.
Width, inside of Car.....	8 ft. 8 1/2 in.
Height, inside of car (at center).....	8 ft. 3 3/4 in.
Width of door opening, one each side.....	3 ft. 6 in.
Width of end door opening.....	2 ft. 5 in.
Length of center sill.....	44 ft. 9 1/4 in.
Thickness of bottom cover plate.....	0 ft. 1 1/2 in.
Size of belt rail.....	5 ft. by 1 1/4 in.
Size of side plate.....	5 in. by 3 in. by 1/4 in.
Thickness of sheathing above the belt rail.....	0 ft. 1 1/8 in.
Thickness of sheathing plate below the belt rail.....	0 ft. 1 1/8 in.

uits, are placed in such a manner as to be readily accessible to the operator, so that he may readily observe and control the chronograph record and make necessary memoranda on it.

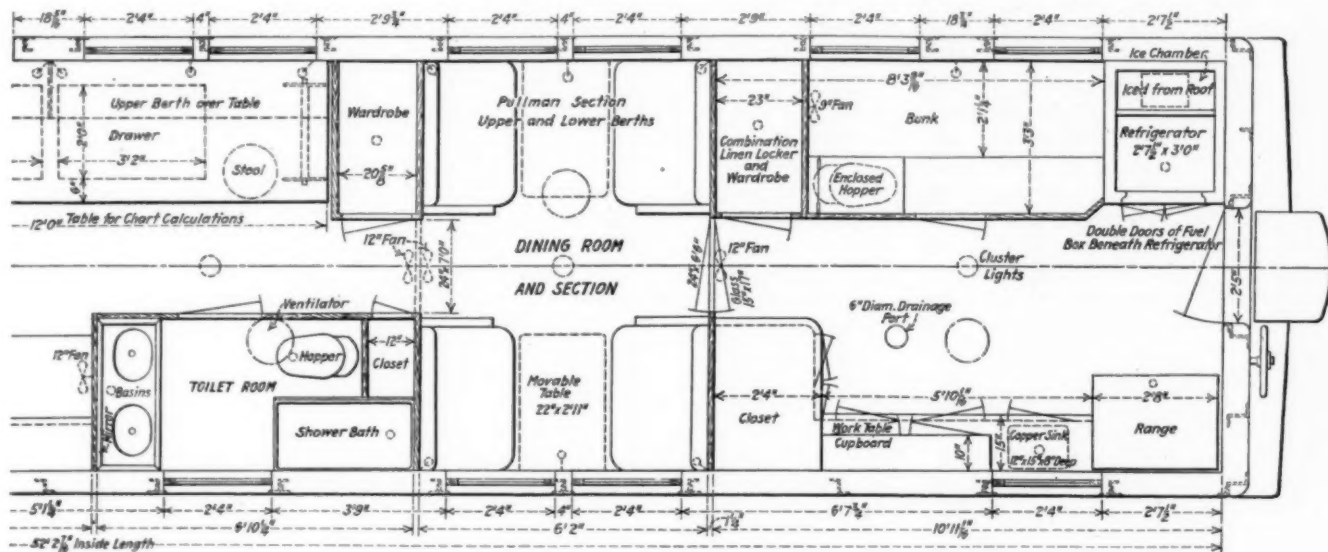
The Driving Transmission

The driving transmission includes a clutch control equipment for shifting the driving mechanism from the car trucks to an electric motor operated from the train line battery. It also includes the shift gears for changing the travel ratio of the paper ribbon and provides an automatic reverse drive clutch so that the paper will always travel forward regardless of which direction the car travels. The transmission

gears are enclosed in a dust proof oil case of rigid construction. Bevel gears are used for connecting the drive to a telescopic torque shaft connected to the rear axle of the forward truck under the dynamometer end. This drive on the forward truck is also mounted in a dust proof gear case and is provided with a disengaging clutch for discon-

as well as for the purpose of keeping the paper in motion when the car is at rest. All the transmission levers, the motor rheostat and switches for the entire apparatus are located within easy reach of the operator.

The kitchen is located at the opposite end of the car from the dynamometer compartment, as shown in the floor plan.



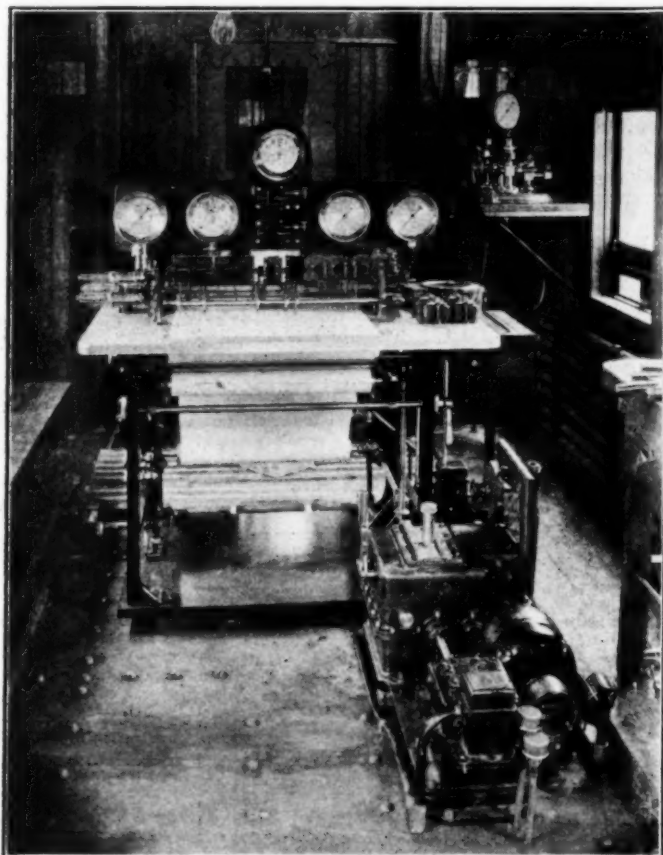
Car Built by the New York Central

necting the entire gearing system when the car is being makes automatic electric contact for every 100 ft. of train moved in an inoperative condition.

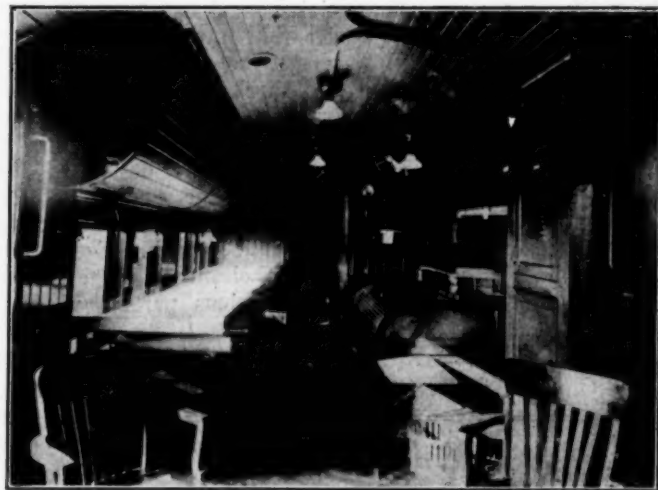
The distance timer, which is on the transmission unit, travel. A constant speed motor is used for the speedometer

It is equipped with a range, refrigerator, copper sink, work table with cupboards above and below, china closet, a fuel box which is located beneath the refrigerator, combination linen locker and a wardrobe compartment equipped with a bunk and enclosed hopper for the use of the porter who takes care of the car.

The dining room section is provided with two Pullman sections of upper and lower berths and two removable tables. The section between the dining room and side doors, which



The Dynamometer Recording Apparatus with the Traveling Paper in Position Ready for Operation



Interior View of the Dynamometer Compartment, Showing the Work Table, Desk and Upper Berth

is shown in one of the illustrations, is provided with a table, equipped with two drawers, for chart calculations. The equipment in this section also includes file cases, stools, dynamometer chart reels, two upper berths, a roll top desk and chair, a book case and water cooler stand, drinking cup container and a wardrobe and closet. The section between the side doors and the dynamometer end of the car is provided with a work bench, gage tester, gage board, vise,

instrument board, chairs for spectators, lockers, recording table, dynamometer, and a chair for the operator.

Special Features

The car is heated with the vapor system and is ventilated by means of five 6-in. Globe ventilators. The sides, end walls, cupola and roof sheets are insulated with a 1/2-in. thickness of special hair felt, applied next to the outside sheathing. Three ply hair and asbestos insulation is applied over the entire surface of the steel floor plates and to the inside surface of the outside sheathing and the under side of the bottom course of the flooring.

Current for the lighting equipment is supplied from a three-kilowatt low speed generator operated from the car axle. The lighting equipment can also be operated on battery discharge on layovers up to eight hours.

The water supply is contained in two overhead water tanks, located in the kitchen, one on each side of the car and formed to the contour of the roof. Each tank has a capacity of 100 gallons. These tanks can be filled simultaneously from the ground on either side of the car or from a filling opening in the roof. The tank on the range side of the car is used for hot water which is heated in pipes passed through the range. Additional heating facilities are also provided by the use of a steam jacket which surrounds two of the radiator pipes on the range side of the car. The sink basins and shower are provided with supply pipes for hot and cold water.

Every possible short cut for saving time and labor in the

curve taken in passenger traffic is double for that taken in low speed freight traffic.

The principle feature of the car is the large number of records and miscellaneous information which can be taken, relating to successful train operation. This information can be so arranged that it will not only be of value to the Motive Power Department, but to the various other departments as well.

Railway Purchases of Crossties and Poles in 1923

A TOTAL OF 135,976,117 crossties were purchased by steam and electric railway companies in 1923, according to data collected by the Bureau of the Census, in co-operation with the Forest Service of the Department of Agriculture, and issued by the Department of Commerce. As compared with this, the crosstie purchases totaled 123,766,000 (estimated) in 1915 and 135,053,000 in 1911.

The number of poles purchased in 1923 by steam and electric railroads, electric light and power companies and commercial telegraph and telephone companies, was reported as 3,060,794, as compared with 4,077,964 poles in 1915 and 3,418,020 poles in 1911. The report of purchases of poles in 1923 does not include those made by the small

POLES PURCHASED, BY KINDS

Kind of wood	1923	1915	1911	1909	1907
Total	3,060,794	4,077,964	3,418,020	3,738,740	3,283,268
Cedar	1,702,247	2,521,769	2,100,144	2,439,825	2,109,477
Chestnut and oak	817,259	851,085	893,079	844,908	706,732
Pine	402,393	546,233	161,690	179,586	155,960
Cypress	73,403	67,644	72,995	77,677	100,368
All other	65,492	91,233	190,112	196,744	210,731

¹Compiled by Department of Agriculture, Forest Service.

final computations has been incorporated in the design and operation of the car. A special method has been provided for integrating the area under the draw bar pull curve. Special devices designed to protect the delicate instruments from unnecessary vibration and shock have been provided. When the liquid in the dynamometer cylinder becomes dangerously low, an electric contact is made automatically, which rings a warning bell. The entire design of the machine is dependent throughout on line contact and is, therefore, quite free from friction. The piston movement for the maximum draw bar pull is .006 inch. Every provision possible has been made to eliminate the effect of friction and the weights of the various parts have been reduced as much as possible in order to decrease the effect of inertia. In order to facilitate the work of compiling data the speedometer is geared so that the height of the speed

rural telephone lines, of which there are approximately 56,000 in the United States.

The number of crossties of various kinds purchased for five specified years is shown in the following table, the figures for 1923 being preliminary in character and subject to such corrections as may be found necessary upon further examination of the returns.

This table shows that the bulk of all crossties purchased in 1923 were oak, the number being 62,915,237, or about 50 per cent of the total purchases made during the year. Ties of Southern pine occupy the second place with 22,048,967 purchased, while Douglas fir ties came next with 15,316,571. Ties of these three varieties of wood comprised nearly 75 per cent of all purchases made. The report also brings out that the purchases of oak and Douglas fir in 1923 were larger than in any previous year of record.

CROSSTIES PURCHASED, BY KINDS OF WOOD

Kind of wood	1923	1915	1911	1909	1907
Total	135,976,117	97,106,651	135,053,000	123,751,000	153,703,000
Oak	62,915,237	49,333,881	59,508,000	57,132,000	61,757,000
Southern Pine	22,048,967	14,115,681	24,265,000	21,385,000	34,215,000
Douglas fir	15,316,571	6,950,916	11,253,000	9,067,000	14,525,000
Cypress	5,243,835	4,478,612	5,857,000	4,589,000	6,780,000
Chestnut	4,419,782	4,548,352	7,542,000	6,629,000	7,851,000
Tamarack or larch	4,220,194	3,858,098	4,138,000	3,311,000	4,562,000
Cedar	3,676,228	5,122,103	8,015,000	6,777,000	8,954,000
Hemlock	3,477,740	859,662	3,686,000	2,642,000	2,367,000
Gum	3,050,798	485,466	1,293,000	378,000	15,000
Maple	3,035,007	1,069,547	1,189,000	158,000	.....
Redwood	2,492,445	563,585	1,820,000	2,088,000	2,032,000
Beech	2,279,221	1,173,490	1,109,000	195,000	52,000
Western yellow pine	1,340,007	1,402,836	2,696,000	6,797,000	5,019,000
Lodgepole pine	949,451	1,316,819	.....	.....	.....
Birch	369,154	455,815	.....	.....	.....
All other	1,141,480	1,361,694	2,682,000	2,603,000	5,574,000

¹Compiled by Department of Agriculture, Forest Service. Mileage of railroads reporting represented 78.46 per cent of total.

²Estimated total for all railroads, 123,766,000 (see note 1).

New York Railroad Club Annual Dinner

Record-Breaking Attendance — Doctor Friday on "The Future of the Railroads"

THE annual dinner of the New York Railroad Club, which was held at the Hotel Commodore, New York, on Thursday evening, December 18, taxed the capacity of the hotel to the very limit, the attendance being in the neighborhood of 2,900. This is undoubtedly one of the largest formal dinners ever held in this country. In addition to the grand ball room with its balcony and the smaller dining rooms at either end, it was necessary to set tables in what is known as "Taverns A, B and C" on the same floor as the grand ball room. The committee in charge found it necessary to discontinue the sale of tickets 24 hours before the dinner.

Several of the railroads arranged for their representatives to sit together in the form of delegations. The largest groups of this kind were the Erie with 210 representatives, the Brooklyn-Manhattan Transit Corporation, 160, and the Central Railroad of New Jersey with 100.

W. F. Jones, general storekeeper of the New York Central, West Albany, N. Y., the newly elected president, acted as toastmaster. Dr. David Friday, professor of economics of the New School of Social Research, was the principal speaker, his topic being "What the Future Holds for the Railroads." Robert A. Burlen, playwright and humorist of Boston, gave a humorous talk on "Uncommon Sense." The addresses were broadcast through the courtesy of station WEAJ of the American Telephone & Telegraph Company.

Because of the care and thoroughness with which the preceding annual dinners of the club have been organized and the fact that they have been growing steadily in size from year to year, it was possible to successfully handle the record-breaking crowd, in spite of the fact that a great number of the tables had to be removed from the grand ball room after the dinner to make room for the large number of those who came in from the other dining rooms.

The dinner was preceded by a toast to the President of the United States and the singing of "America." During the dinner there were special entertainment features and chorus singing in the various dining rooms.

Presentation to F. T. Dickerson

Immediately after dinner had been served and as soon as the guests could be gathered in the grand ball room, Frank Hedley, president and general manager of the Interborough Rapid Transit Company and a past president of the club, presented Past President F. T. Dickerson, secretary and treasurer of the Central Railroad of New Jersey with a four-piece silver tea service and tray, the latter bearing a testimonial inscription. Mr. Dickerson has just finished a term of two years as president, during which period the club has made quite remarkable progress. Mr. Dickerson, in responding, expressed sincere appreciation for the support which had been given to him by his associate officers and the club members, and turned the tables on Toastmaster Jones by calling upon the guests to sing "Albany, Dear Albany," to the tune of "Maryland, My Maryland." This was in recognition of the large number of Mr. Jones' fellow townsmen who had honored him by attendance at the dinner.

The arrangements for the dinner were in charge of a general committee including as its general chairman, Douglas I. McKay, president, Standard Coupler Company; general vice-chairman, William J. Moody, treasurer, Erie Railroad Company; chairman, committee on reception, Roswell P. Cooley, eastern manager, Vapor Car Heating Company; chairman, committee on entertainment, Arthur N. Dugan, vice-president, Bronze Metal Company; chairman, committee on printing, Edward Laterman, general sales representative, Champion Rivet Company; chairman, committee on seating, F. O. Schramm, assistant secretary, Pressed Steel Car Company; chairman, committee on publicity, Roy V. Wright, secretary, Simmons-Boardman Publishing Company, and James G. Bateman, assistant manager of sales, National Tube Company; C. C. Castle, vice-president, National Railway Appliance Company; D. W. Pye, president, Tuco Products Corporation.

After the addresses by Dr. Friday and Mr. Burlen, the program closed with the singing of "Auld Lang Syne." An abstract of Doctor Friday's address follows:

What the Future Holds for the Railroads

By Dr. David Friday

Professor of Economics of the New School of Social Research

"The industries of the United States are at a turn of affairs such as comes only once in a decade or two. We have just seen an industrial depression, brought to its close by a dramatic revival in agricultural purchasing power. This revival is real and thoroughgoing and it will have the same consequences this time that came with agricultural revival after the depression of the seventies and again after that of the nineties.

"Business depression is never fully over until agricultural prices have revived, and until the purchasing power of the thirty million people on farms has been restored. But when that does happen business faces a procession of years during which the demand for goods is large, production is high, and business is prosperous. You may have a temporary business revival, such as occurred in this country in 1922 and 1923, without an agricultural revival, but in the long run it is the latter which brings abiding prosperity.

"This is the fundamental fact in forecasting what the future holds for the railroads. Business prosperity, of course, produces better profits, prices which tend upward rather than downward, and substantial wage payments. But the fundamental fact underneath, the essence of prosperity, is a large volume of production. When production is large, railroad traffic is large; and when traffic is large there is employment for railway labor and profit for the railroad investor.

"The depression of 1893-1896 was brought to an end by the rise in wheat prices during the election year 1896, and by a continuation of that rise in the next year. Production then increased at an amazing rate. Within four years after 1897 the traffic of the railroads had increased 50 per cent. In ten years it had doubled.

"Whenever the production of goods is large railroad traffic is correspondingly increased. This must follow as the night the day, for in modern industry there can be no increase

in production without increased transportation. Both the raw materials and the finished product must be carried by the railroads. What the period of business revival which confronts us means for the railroads, then, is a growth of tonnage and of business. The year 1925 should see a new high-water mark in American railway traffic.

"Such an increase in traffic will inevitably bring with it an increase in gross earnings. It will bring with it also an increase in expenses, and some increase in investment. It takes equipment to carry traffic; and the large expenditures which the railroads of the country have made during the last few years in the face of criticism and discouragement will come to fruition during the next year. The wisdom of the managers in their optimism will be vindicated. They will no doubt continue to buy large quantities of equipment and to spend large sums on improvement. The railroads have always been ready to make improvements when there was any money available for that purpose.

"Here is an interesting fact in this connection. In the past the railroads have been able to handle increasing traffic without a corresponding increase in investment. In other words, they have utilized their investment more intensively as traffic has grown.

"Twenty-five years ago their investment was ten billion dollars, and the number of tons of freight originating in the United States was half a billion. The investment per ton of freight originating was therefore, about \$20. Since that time the railroads have invested another ten billion dollars. All of this investment was made at rising prices, yet in 1923 the investment account of the American railroads stood at only \$15 per ton of freight originating. No other industry in the country has made any such showing.

"The important cost in operating the railroads is not the return upon the investment, but operating expenses, consisting of wages, taxes and materials. Even in a year like 1923 when railroad profits were better than usual, these operating expenses absorbed more than five times as much as did the return on investment. Unless operating expenses can be held in check, the increased revenues will avail nothing.

"In the past the railroads have been able to meet the rising level of wages, taxes and prices of materials by greater efficiency and economy in operation. The prices of materials in 1919 were more than twice as high as they were at the beginning of this century. Wages per man employed were two and three-fourths times as high; and taxes per dollar invested were four times as high.

"Yet, with all these increases, the present cost of carrying a ton of freight one mile is only one-half larger than it was.

"Someone should write an article on the question as to which is the country's most efficient industry. Investigation will disclose that the railroads rank among the highest. If this is continued the railroads can continue to pay the high scale of wages which now exists in the industry. Moreover, for once in their history, they can approach the point where they are making a return comparable to that which other industries are earning. But the railroads' profit per ton-mile of freight is less than it was in 1913, and only three-fourths of what it was at the beginning of this century. The country needs to have railroad profits brought more into line with the prevailing rate of profits in other industries.

"In the field of material costs the prospect is brighter for the next five years than it was for the 20 years culminating with 1920. During that period the costs of all materials were steadily rising. Four years ago materials cost three times as much as at the beginning of the century and more than twice as much as before the war.

"For the future it is my opinion that we face no such increase in material costs. During the year 1925 they will rise somewhat, but that rise will not be permanent, nor will it be as great as some people fear. With increasing traffic, increasing efficiency, and comparatively steady material costs,

the railroad business holds out every prospect of full employment, good wages and adequate profits. Given those things, the railroads should find no trouble in marketing their stocks and bonds. This will provide the capital needed both for the expansion of their facilities and for improvements which will enable them to carry a continuously larger volume of traffic at a low cost of operation."

"To Reduce the Number of Preventable Accidents"

By C. L. Emerson

[At a recent meeting of officers of the Chicago, Milwaukee & St. Paul, Mr. Emerson, master mechanic at Chicago, presented data showing safety records in the company's shops, tabulated according to the standings of the different foremen. For example, at Western Avenue, eleven foremen overseeing 352 men, reported, for one month, five employees injured; and the foremen's names are entered in this record in the order in which the number of injuries places them, the report showing in every case the percentage of persons injured to the total number supervised. Discussing the record, Mr. Emerson spoke in part as here reported.]

ELIMINATE the weakness of the human element and there would be few accidents. This may appear to be quite an impossibility; yet statistics of the last ten years show that accidents on the whole have been decreased among the employees of this road 25 to 35 per cent. This may be traced directly to the Safety First movement.

Let us consider our railroad as a vast machine and each one of us one of the necessary cogs. We should strive to be perfect cogs; and that would make a perfect machine. And we must not lose sight of the fact that the man next to us is also a cog in this same machine. Even though we may perform our duties carefully enough, we may by the simple act of mislaying a tool, break the cog next to us. One of the first qualifications we should demand of an applicant, is that he be careful in the exercise of his duties. This is just as important as that he be thorough in his work. The careful man is in most cases a thorough one.

We ought to hold meetings in our respective localities, with our supervisors, and review accidents and injuries with a view toward eliminating a recurrence. Some months ago with this thought in mind, I made a study of the situation in Chicago Terminals with the further idea of arriving at some equitable means of ranking the supervisors. After each supervisor is ranked at each point each separate point is ranked, using the same method.

This places the supervisors on a competitive basis in which they are striving for first rank; and the results so far have been very gratifying. It also makes it possible to determine, in many cases where the responsibility for injuries and accidents lies.

* * * In the year 1913 with an average of 49,400 employees monthly there was a total of 147 killed and 13,636 injured, costing this company in settlement of claims \$1,206,804. In 1923 with an average of 56,000 employees monthly, there were 43 killed and 9,757 injured, a reduction of 71 per cent in the number killed and 28 per cent in the number injured; cost of settlement of claims, \$1,341,884.

The National Safety Council estimated a 20 per cent increase in industrial accidents in the United States in 1923, with a total of 3,000,000 for the year, 23,000 of which were fatal. Increased production, many new employees engaged and a let-down in safety interest by employers and employees are given as the factors contributing to this increase.

Loyalty among employees must be properly implanted and made to grow, as disloyalty is an aiding element to labor turn over, which means new men and new men in turn means accidents.

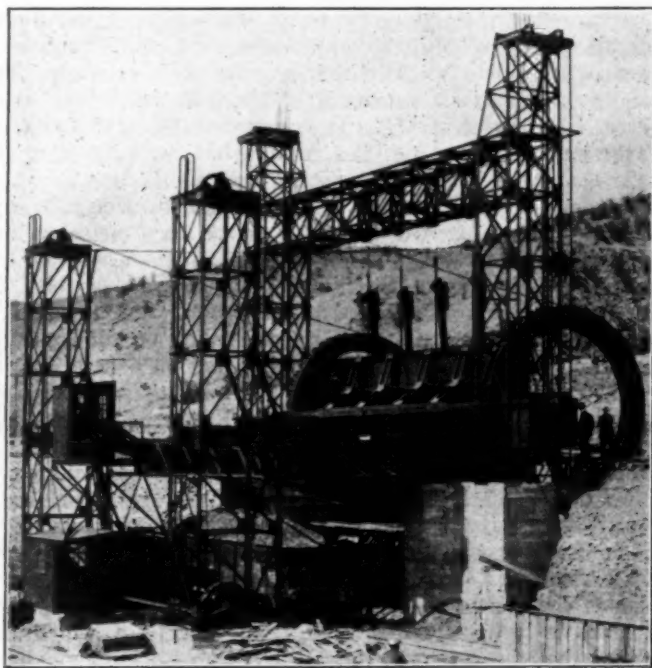
Denver & Rio Grande Western Uses Car Dumper

Cost of Transfer from Narrow to Standard Gage Cars is Greatly Reduced by New Equipment

AMONG IMPROVEMENTS recently completed on the Denver & Rio Grande Western is the installation of a rolling car dumper at Salida, Colo., to transfer coal, ore and other bulk materials from narrow-gage to standard-gage cars. Salida is the point of contact between the narrow-gage lines of the system extending into southern and western Colorado with the main standard-gage line between Denver and Salt Lake City. Owing to the difference

tions. The operation of the car dumper is effectively safeguarded by automatic control equipment.

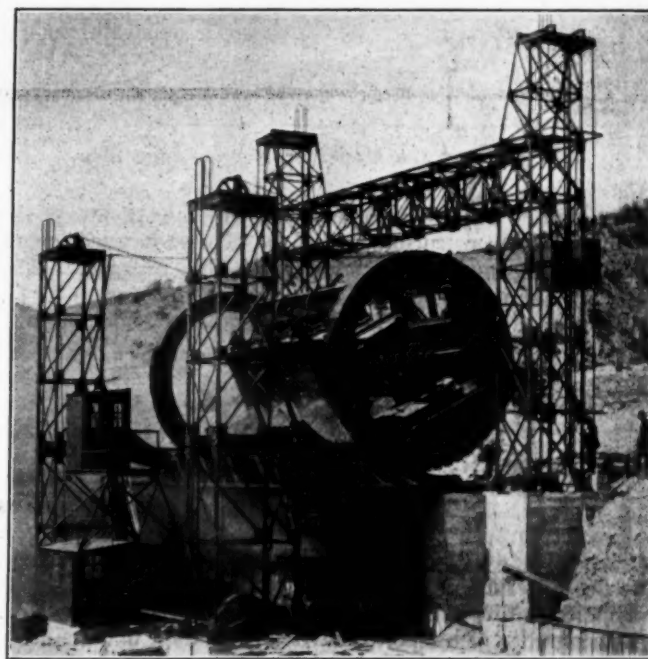
The narrow-gage loads and the standard-gage empties are set by a switch engine on two gravity tracks and dropped down, one by one, to the machine. As the smaller cars are dumped and the larger cars are loaded they are moved by gravity to the delivery ends of the tracks where they are picked up by the yard engine to be placed in trains. The capacity of the gravity tracks is approximately 70 cars. The operation of the car dumper requires five men, one to operate the dumper and four to move and spot the cars. These five men replace 75 men formerly employed in the manual transfer of materials from the narrow-gage to the standard-gage cars. With hand labor it cost an average of 23 cents per ton for all commodities handled in transfer, while during August, 1924, a fairly heavy month, the cost of making the transfer by means of a car dumper averaged four cents per ton. Including the cost of transferring materials that could not be handled by the dumper, the general average cost of transferring at Salida during that month was 10.9 cents per ton. During the months of June, July, August and



The Car Dumper as Seen from the Standard Gage Side—Hoist House and Towers in the Foreground

in the gages, interchange of traffic at this junction requires the extensive transfer of lading from narrow-gage to standard-gage cars or vice versa. The great bulk of the railway's business calling for transfer originates on the narrow-gage lines and consists mostly of coal and ore. These two commodities constitute about 85 per cent of the transfer business and such bulk commodities naturally lend themselves readily to transfer by mechanical means, as with the use of a car dumper.

The machine consists of a cradle comprising a floor system supported by two structural steel rings upon which narrow-gage cars are spotted for dumping. This cradle rolls on an inclined track to the dumping position over a standard-gage track. This movement is effected by the aid of two cables fastened around the rims of the two circular girders and carried over sheaves at the top of two auxiliary towers, thence down to motor driven hoisting equipment in a hoist-house located between the bases of these two towers. As the rolling operation takes place the top of the car is engaged by four clamps which support the car when in the inverted position. One end of each of these clamps is attached to the dumping frame while the other end is connected by means of a cable to one of four counterweights supported from sheaves at the tops of the two main towers. These four counterweights are clearly shown in the illustra-

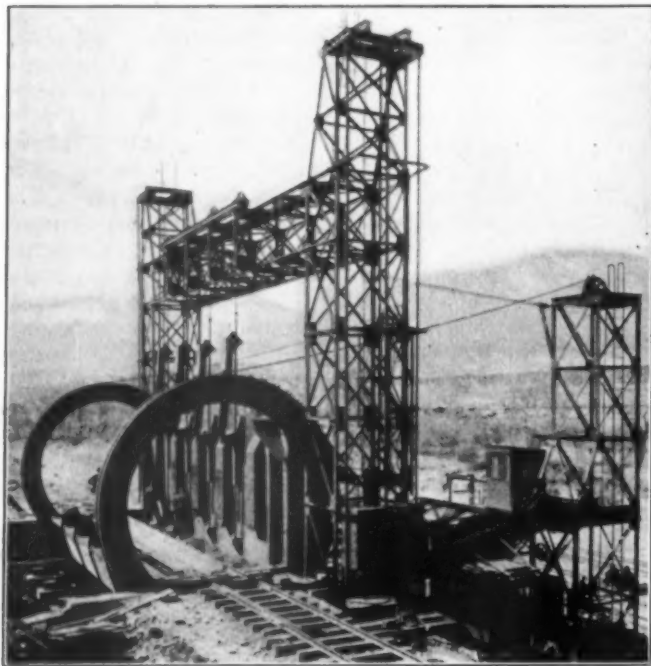


The Dumper in Operation—Clamp Counterweights Part Way Up the Towers

September, the car dumper was used for the transfer of 111,788 tons from narrow-gage to standard-gage cars with a saving in labor of \$11,910.

The advantages derived from the installation of the car dumper are not restricted to the saving effected in the handling cost since one of the most important items is the marked decrease in the detention of cars while awaiting transfer. The car dumper will readily handle 20 cars per hour, whereas 75 men transferring by hand averaged about 30 cars per day. Furthermore, during periods when narrow-gage cars delivered to Salida exceeded this number, they were frequently detained from two to six days awaiting transfer, whereas they are now ready for the return movement

within two hours after they are spotted on the dumper receiving track. Another source of economy in the new plant is derived from the reduction in yard switching service since none is now required from the time that the cars are set at the dumper until they are pulled out for the makeup of outbound trains. The equipment has now been in service six months and has proved entirely satisfactory. The dumper was furnished by the McMyler Interstate Company, Cleve-



A View from the Upper or Narrow-gage Side

land, Ohio. Battey & Kipp, Inc., of Chicago, were the engineers and constructors under the general supervision of Arthur Ridgway, chief engineer of the railroad. The *Railway Age* is indebted for the above information to T. H. Beacom, receiver, Denver & Rio Grande Western.

Railroad Legislation

WASHINGTON, D. C.

THE SENATE committee on interstate commerce at its meeting on December 16 ordered a favorable report on the bill H.R. 4,168, imposing additional penalties for the pilfering of freight from cars containing interstate commerce, which had been passed by the House on April 21. The committee also reported favorably on the Cummins resolution urging a larger appropriation for the Interstate Commerce Commission for valuation work. No action was taken on the Howell-Barkley bill or the Hoch-Smith rate resolution. The next meeting of the committee will be on January 7 when hearings will be started on the subject of consolidation.

Some informal conferences have been going on for the purpose of ascertaining whether it is possible to reach some kind of compromise on the Howell-Barkley bill by a modification of some of its provisions. Senator Cummins has discussed the matter with President Willard of the Baltimore & Ohio, who has also conferred with representatives of the railroad labor organizations on the subject. No objection was made by the advocates of the bill in the House to its being set aside on December 15 for the Woodrow Wilson memorial exercises.

Representative Colton, of Utah, by request, has introduced

in the House a bill, H.R. 10,731 "to establish uniform car rates and class rates for the transportation of freight by railroad" which provides that each road shall, on or before January 1, 1925, make and file with the Secretary of Commerce a "base rate" per ton-mile, which rate shall be the lawful base rate. Until such base rate shall have been filed the bill would fix it at one cent. Car rates would be computed on the basis of the tonnage of the car and the roads would also be required to establish a classification of five classes in accordance with a prescribed relationship.

Senator Bruce of Maryland has introduced a bill, S. 3644, vesting jurisdiction in the court of claims, notwithstanding any statute of limitations, to hear and determine the claim against the United States of any common carrier growing out of transportation furnished for the government between January 1, 1916, and January 1, 1918, provided such claim be asserted by petition in the court within two years from the passage of the act. A preamble states that the handling of these accounts with the government was greatly impeded because of the depletion of the forces of the carriers by the requisitions on their personnel by the government and the disorganization of their forces incident to the war and the requirements of the Railroad Administration.

Five pages of the Congressional Record of December 11 were devoted to a "boost" for the Regan automatic train control device, inserted in the form of an "extension of remarks" by Representatives Homer P. Snyder of New York, who urged the prompt attention of Congress to his bill to impose additional penalties on railroads for failure to comply with the Interstate Commerce Commission's train control orders. Mr. Snyder began by saying that he had no interest in any particular train control device but that it would be necessary to refer many times to the Regan device because "it is the one which has been approved by the Interstate Commerce Commission; all others have so far been rejected." Two days later he asked to have the latter statement corrected as a misstatement, saying that the language he had desired to use was that "all other devices have so far not been approved." The prepared article included a long outline of the history of train control and of the virtues of the Regan device as distinguished from others, in which he stated that the system as installed on the Rock Island had been completed and "approved as in full compliance" with the requisites laid down by the commission. He gave a list of the roads affected by the commission's order, with a statement regarding the progress of their installations, referring to the names of the devices used on roads other than the Rock Island as having been "disapproved" or, in most cases, "nonapproved," and added: "It is worthy of note that carriers which are proceeding with expensive installations costing approximately \$10,000 per mile (for non-approved devices) are among those carriers earning in excess of 6 per cent on valuation or have tremendous surpluses, in the face of the fact that the approved system can be installed at approximately \$2,000 per mile."

AS A MEANS of aiding patrons in locating the Chicago & North Western passenger terminal in Chicago, this company has installed an 18,000,000-candle power searchlight on top of the building which it operates from sundown until 10 p. m.

DICTIONARIES are now a necessary feature of efficient passenger transportation; or, at least, the Baltimore & Ohio has installed dictionaries on observation and club cars of its principal trains, for the benefit of passengers who spend their time on cross-word puzzles. The question of providing equally good facilities on day coaches has been under consideration but is not yet settled. Passengers who absent-mindedly carry off the railroad company's property are believed to be more numerous on day coaches than on parlor cars.

The Railroads and National Expansion*

Railroads' Need Is Credit—Their Hope Is the Public's More Intelligent Attitude

By Charles H. Markham
President of the Illinois Central Railroad

EVERYTHING TODAY points to long-continued prosperity on the part of the American people. The injurious effects of the recent great war are beginning to wear off, and all lines of business, including agriculture and the railroads, are ready to make a new start to levels of industry that have been as yet untouched. The settled conditions that were in evidence prior to the war are to be resumed. Farm prices are becoming more stabilized. A national election unaffected by the heritage of the war has just been decided. A national policy of encouragement of business has been determined upon. In every way, I believe that we are safe in looking forward to an era of good times in which every one will share.

The part the railroads must play in this advance is the one great railway problem facing us today. A great many persons talk about the "railway problem" in an indefinite way, as if there were a general problem of some permanent sort that had too long gone unsettled. As a matter of fact, there has been a succession of "railway problems" in this country from the earliest days of the railroads—some serious, some relatively unimportant. The first important "railway problem" was whether or not the railroads could be built fast enough to keep pace with the needs of this growing country. The second problem was whether or not the railroads should be allowed to make their own rules governing their contact with the public. This being settled in the negative by the adoption of a general policy of governmental regulation, the next great problem was whether or not the railroads could prosper under the adverse effects of public hostility. Then the government took over the railroads during the recent World War, and the question thereafter developed into a problem of whether or not the path to railway success might be by government ownership. Now that this question has been settled in the negative by the overwhelming verdict of the people at the polls, the only "railway problem" remaining is that of the ability of the railroads, under private management, to take care of the future transportation needs of this great nation.

The railroads are back, in a way, where they began nearly a century ago, faced again by the need of catching up and keeping up with the country. The mark we must shoot at is high. Our railway freight traffic, we must remember, has increased the tremendous amount of more than 800 per cent in the last forty years and has more than doubled itself in the last twenty. It has increased at a rate well in advance of the population increase, because the requirements of our own people and of our foreign trade have been developed to a marked degree by the unprecedented inventions and advance in civilization of recent decades. That we, as a people, are living far better than our forefathers did is demonstrated by our increased dependence upon transportation; that we are doing more and more business with our neighbors all the time is indicated by the increase in our export traffic, well aside from the artificial increase occasioned by the war. That these favorable conditions for the development of transportation will be maintained, I have little doubt, and that is why I regard it as so highly essential for our rail-

roads to place before every other consideration the preparations that they must be making for the future.

We cannot, however, gage our preparations for the future by what has been done in the recent past. Despite the disturbances incident to the World War, railway freight traffic per mile of line had climbed by 1923 to a level approximately 36 per cent above the level of 1913, a normal year prior to the war. In the same period the investment in property per mile of line had increased only 31 per cent. The total tractive power of locomotives had increased only 30 per cent and the total capacity of freight cars only 18 per cent.

Despite these apparent discrepancies in preparation, however, the record-breaking traffic of 1923 was handled without serious delays or breakdowns in service. The ability to handle a 36 per cent increase in freight traffic with only an 18 per cent increase in the capacity of freight cars and a 30 per cent increase in tractive power was due, of course, to the increased efficiency of operation that had been developed by advances in the science of railroading and by the wise application of that 31 per cent increase in investment per mile of line. Longer trains could be handled and were handled. The reduction of grades cut down operating expenses. Delays in terminals were reduced by better terminals and better organization. In many ways the ability of the railroads to handle the business was improved, and the result was that the railroads managed to pull through 1923 without serious inconvenience to their patrons.

The railroads cannot, however, rest on their oars. The end of 1924 finds them again faced by a traffic that requires all of their facilities to handle. The car-loading records of 1923 have been going by the board and the increase in business bids fair to continue for some time to come. The railroads are spending money for additions and betterments in an effort to keep up with this development, but they have a great deal to do.

Owing to inadequate rates and uncertainty as to the attitude of the public, our American railroads in recent years have not been able to make adequate investment preparations for the future. More than a billion dollars was borrowed and spent in 1923 to make up for some of the more noticeable defects, but these expenditures did not entirely offset the postponement of needed expenditures that had been forced upon the railroads in the past, much less place the railroads in a position to go confidently ahead. If railway traffic increases in the next ten years only half of what it did in the last ten years, it has been estimated, an expenditure of approximately \$800,000,000 a year above the ordinary maintenance will be required steadily for the next ten years to keep pace with the growth of business. Considering the promise of continued prosperity we have today, I would not be at all surprised to see railway business increase more than that estimate in the next ten years and an investment expenditure be required of at least a billion dollars a year. This seems a large amount, but we must remember that the purchasing power of the railway dollar is not now what it once was. Equipment and supplies today cost far more than they ever did before.

It will take confidence on the part of railway managements to spend a billion dollars a year, and it will take confidence

*An address delivered before the annual convention of Life Insurance Presidents at New York City, on December 12.

on the part of investors to lend it. I am glad to feel that there is growing confidence in the economy and efficiency of our present railway managements on the part of patrons, investors and employees. That this confidence is justified is proved, I believe, by the fact that operating expenses have been reduced nearly \$5,000,000 a day in the last four years, while at the same time a great increase has been made in the ability of the railroads to handle the business offered them. That less than one-fourth of this saving in operating expenses has been made through reduction of wages from their war-time level is, it seems to me, another source of pride. Because of increased efficiency and the saving in operating expenses, the railroads have been able this year to prevent any serious reduction in net operating income as compared with 1923, although the traffic has been a great deal lighter most of the year.

Situation Clarified by Recent Achievements

This record of economy and efficiency, it seems to me, has its greatest significance as an omen of adequate financial strength in the trials that are yet to come. It means that even under the most adverse circumstances investors need not fear the disappearance of return. There is a promise of strength and durability evident in the conduct of the railroads today. Certainly the railway situation has been greatly clarified by the adverse conditions met and overcome by the railroads since the war, as well as by the result of the recent national election. On the one hand, railway managements have been forced by necessity to economies in operation hitherto unknown, and this has caused the railroads to become surer of themselves and better able to survive adversity than they ever were before. They have found strength in adversity. On the other hand, they have come to rely upon a friendship with the public, rather than to look for the enmity formerly so assiduously cultivated by those who found political advantage for themselves in fomenting distrust between the people and the railroads that served them. The outcome of the recent election has been such as to encourage a hope of permanently good relationships between the railroads and their patrons. From the two basic standpoints of inner efficiency and public confidence, the railroads are well fortified for the future. The railroads realize that it is important for them to give good service now and to please the people of today, but that it is far more important for them as a matter of national policy to be building for the future. If the public can only hold this point of view, all will be well.

The dependence of the railroads upon favorable public opinion is nowhere more clearly expressed than in their financial development. In the beginning, when the romance of opening new territory was at its height, everybody saw only good in the railroads, and there was little difficulty in obtaining financial backing for them. European investment supplemented the pioneer capital that was to be obtained in this country, and the work of opening up the country by means of new rail lines went merrily ahead. That was the happy period when the public had unbounded confidence in the railroads and when, of course, the immediate results of railway investment were most clearly to be seen.

Then came a time when the railroads lost at least part of their high standing in public esteem. Abuses crept into their operation, and the government found it necessary to adopt regulatory practices. At the same time, financial manipulation of some railway securities was in progress without great regard to the welfare of the properties themselves. Between the two fires, earnings were cut down and public confidence in the railroads was lessened, so that railway financing became a difficult matter. The development of regulatory practices eventually made the railroads unattractive investments from the standpoint of investors seeking both security and a satisfactory return, and many of them with-

drew. The result is, as someone so well said, that railway financing has become a matter for "Main Street" rather than for Wall Street.

And Main Street is well populated. There are many railway investors living along it. Public opinion hereafter must be regarded as the opinion not only of the patrons and employees but of the investors as well. One value of the recent agitation for government ownership of railroads was the attention the campaign called to the third human factor that must be considered in connection with every railway problem. Public attention was focused for the first time in a good many years upon railway ownership. The patrons have always been ready to discuss the allied subjects of rates and service; the employees have always made their case evident when it has become necessary for wages to go either up or down; but we have seldom heard much either from or about the proprietary interests involved—the stockholders and the bondholders. I am glad that the latter at last have let themselves be heard from.

More of us are railway investors, directly or indirectly, than we sometimes stop to realize. It is not entirely fair to separate the people of this country arbitrarily into three separate groups of patrons, employees and investors. To a considerable extent these classifications overlap. It is entirely possible for a person to be an employee, a patron and an investor at one and the same time. Railway securities can be purchased by anyone having the necessary money. More and more public utilities are coming to realize the value of having their patrons and their employees own their stocks and bonds. Such an arrangement gives a firmness, a dependability, a steadiness to public utility financing that is a most desirable thing. An owner, as a rule, does not find fault with his own property as a patron or leave its service as an employee. He will defend his property in debate and at the polls against the attack of those who would destroy it and thereby wipe out the value of his investment. By united action the employees can purchase absolute control of the railroads which employ them and thereby become their own employers. The customers—the patrons—can, if they wish to, own the railroads bag and baggage and make them into any manner of thing they will, subject only to the limitations of the regulatory provisions of law which they themselves have voted. Employee and customer ownership is a most desirable thing for any public utility, and I am glad to see that we are making more and more progress in that direction as the years go by.

Millions of Citizens Now Stockholders

The great insurance companies which you gentlemen represent have done much to make sound railway credit a matter of great although indirect interest to many millions of our people. Of the \$190 invested as a reserve on behalf of each of the fifty million life insurance policyholders of this country, I am told that more than \$40 is invested in railway bonds. In other words, more than \$1 out of every \$5 invested on behalf of the policyholders depends for its security upon the continued earning power of the railroads. Each of the fifty million policyholders therefore has—or should have—a deep interest in railway success.

Many other concerns likewise, representing many millions of individuals, have railway investments of great importance to them; so it may safely be estimated that more than half of our people have a proprietary interest, either directly or indirectly, in the railroads. When the dependents of these investors are counted in, we may safely figure that at least three out of every four persons in this country should have a considerable interest from the ownership side in the maintenance of sound railway credit. Every person in the country, of course, is dependent upon the railroads as a direct or indirect patron, and about 2,000,000 wage-earners have a direct interest as railway employees.

If every member of this great army of patrons, investors and employees could only be brought to agree upon the necessity for strengthening railway credit and keeping it strong as an essential prelude to the forward steps for national expansion, I have no doubt that our present railway problem would no longer vex us. If every one of the fifty million life insurance policyholders, for example, could only visualize himself as a holder of railway securities, I am sure that we no longer would need to fear unfair treatment of our railroads. It is said that the ownership of a home will make the most confirmed rover a good, steady citizen. Certainly, then, the knowledge of railway ownership on the part of millions of our people should have a most steadying effect upon our future railway policy.

It is interesting to study the trend as to railway investment on the part of life insurance companies. The decline in railway earnings that was evident in the past was clearly reflected, it seems to me, in the investment policy of your companies. The railroads were felt to be just a trifle unsafe. Up to this year, the ratio of railway securities to total assets of life insurance companies had been constantly diminishing since 1911, when the first separate statistics for this particular branch of your investments were kept. In 1911, railway securities comprised 35.6 per cent of the total investment of life insurance companies, while at the beginning of 1924 this ratio had dropped to 22.4 per cent. In actual dollars and cents, the investment slightly increased rather than declined, but the value of the investment is really less than it was, measured by the purchasing power of the dollar today.

Insurance Companies as Investors

There was, of course, a reason for this decline in the percentage of railway investment. Other investment opportunities were becoming, by comparison, more attractive. The directors of life insurance companies must be conservative investors. Safety of principal is an all-important consideration with them. Their attitude toward railway investment in recent years reflected what was undoubtedly a general uncertainty as to governmental policy toward the railroads during and since the war. That condition of doubt and fear, developed by uncertainty as to what the public was likely to do, was in sharp contrast with the confidence felt in many other lines of investment, notably real estate, which depend for much of their value upon the essential service rendered by the railroads. The railroads therefore doubly suffered in investment by reason of their own impaired earning power and by reason of the more attractive opportunities their own service helped to create elsewhere.

The comparison with real estate mortgage investments in particular is impressive. In 1911 the ratio of real estate mortgage investments to total assets of life insurance companies was 31.7 per cent. By the beginning of 1924, in marked contrast to the trend of railway investment, this item of real estate mortgage investment had increased to 37.9 per cent. In 1911 the total amount of real estate mortgage investment was \$1,228,000,000, which was \$156,000,000 less than the investments in railway securities. At the beginning of 1924 real estate mortgage investments had increased to \$3,344,000,000—a sum \$1,371,000,000 greater than the current life insurance investments in railway bonds.

The same comparison holds true of other railway securities. Not long ago I had occasion to compare land values with the value of railway stocks. I took Woodbury County, Iowa, in which Sioux City is located, and figured out what \$100 would have bought in land and in railway stocks a few years ago and what it would have bought at the time I was making the figures. Several years before, at the time when \$100 would have bought an acre of the best farming land in the country, \$100 would also have bought a share of stock in any one of the four railroads entering Sioux City. At the time I

was making my figures, the acre of land was selling at close to \$250 and the railway stocks in question were averaging about \$60—a gain of 150 per cent for the investment in land and a loss of 40 per cent for an equal investment in railway stocks.

Now the service rendered by the railroads undoubtedly had a great deal to do with the 150 per cent increase in the value of that land, but the increase in the value of the land certainly did not have a corresponding effect upon the value of the railway stocks. We know now that the railroads and all other business are inter-dependent and must prosper together, but the rule somehow did not work out both ways. Therein lay the secret of the handicap faced by railway financing in the recent past. The attitude of the public toward the railroads was fundamentally wrong.

A Century of Regulation

We have gone through two great cycles in our century of railway history. In one cycle, the public put the railroads ahead of itself. In the other cycle, it put itself ahead of the railroads.

In the first cycle, the effort of all other business was to help the railroads in order that the railroads might in turn advance the prosperity of the country. The well-being of the railroads was placed first, and the well-being of business naturally and inevitably flowed therefrom. If I may compare this situation with mountain climbing, I would say that the program of the first cycle of our railway history was for the country to push the railroads ahead of it in order that the railroads might then pull the country along.

In the second cycle, conditions became entirely reversed. The people decided to look out for their own advantage ahead of the advantage of the railroads. By curbing many of the activities of the railroads, the people of course, prevented some abuses, but at the same time they went beyond the needs of immediate self-preservation and began to take their profits ahead of those enjoyed by the railroads. Instead of pushing the railroads ahead of them up the mountain, the people stepped upon the railroads in order to push their own immediate interests ahead. Instead of climbing after the railroads, the people climbed ahead of them and did not turn to help the railroads up. The comparison between railway and real estate investments illustrated this. In the second cycle of our railway history—which is I hope fortunately past—our people thought it a wiser policy to cash in on immediate advantage than to be moderate in their treatment of the railroads and thereby to sow seeds of good service for the future. Instead of team work, there was disorganization and distrust, and the result was that the railroads were regulated into an unsatisfactory financial condition.

We are now, I believe, in the third great cycle of our railway development. The evil effects of a previous public hostility to the railroads were ended by the passage of the Transportation Act of 1920, under which we now are standing firm. A policy of encouragement of the railroads is now the law of the land. That the people are satisfied with it was demonstrated in the recent election. That favorable traffic conditions will make the railroads yield an adequate return for their owners seems about to be demonstrated. The only thing necessary to complete the chain of co-operation is for the investors to demonstrate their belief in the future of the railroads.

By the record of your own railway investments in recent years, you insurance men have shown a lack of faith in the railroads as compared with other lines of investment, notably real estate mortgages. From the standpoint of a railway man, I might have censured you for the trend your investments were showing, but my own common sense would have approved your choice at that period as the wisest you could have made.

Now, however, conditions are different. They will remain

different. I confidently expect renewed investments in railway securities by life insurance companies in the future that will reverse the downward trend evident in the past. You will have the satisfaction, I believe, not only of protecting your policyholders but at the same time of contributing a substantial share to the preparation the railroads must be making for continued national expansion.

More Intelligent Attitude of Public

The public knows the fundamental needs of the railroads today and is prepared to do its part in catering to those needs. Railway investment will be a safer thing in the future than it has been in the past because the public has come to understand that the best railroad is the one that is able to provide simultaneously good service, adequate dividends, good wages and low rates. These are the four tests of good all-around railway success, and it is not sufficient for a railroad to meet and pass only two or three of these tests at a time. All four are important. All four, including the item of adequate return on the investment, must be equally taken care of.

From the standpoint of national expansion, however, there can be no doubt about which is the most important of these four today. The thing that will insure adequate service in the future is the one big factor, and the only insurance of an adequate railway plant in the future is strong railway credit today. If the employee leaves the service, someone else will always take his place, because railway wages are not and have not been the lowest in the country. The patron in most cases has no alternative but to make use of the railroad or else do without transportation altogether, an unimaginable thing under our present organization of production, manufacture and consumption. There is no way to be sure, however, that there will be an adequate railway plant in the future for the employees to operate and for the patrons to enjoy unless we do justice to the railway investor by making attractive the conditions of investment—and that means to provide a return upon the investment that will make railway credit unquestionably good. Railway securities must be enabled by adequate returns to compete upon the open markets today on terms of equality with the other investments there to be found.

To do this is not an easy thing. We must face the situation with courage and determination. Sometimes the polite, the diplomatic thing to do is to trim sails to the shifting breezes of a temporary public opinion—to lower rates because there is a clamor that they are too high, to increase wages because someone figures that the employees are not able to live at a certain standard, to go in for fancy things in the way of service that do not pay for themselves or to make investments in non-productive improvements, such as the elimination of grade crossings and the building of fine, ornamental stations—things which are worth while but all of which are secondary to the main purpose of the railroads. The railroads should, of course, strive to be popular, but they should strive, first of all, to insure their own future existence because that is the most patriotic, the most worth while thing that they can do.

The American people, in the election just over, have reaffirmed their belief in the principle of private ownership of the railroads. They do not want the government to run the railroads, because that would throw upon taxes the burden of railway financing. Since the future existence of the railroads is therefore definitely intrusted to their private owners, the task of obtaining the investments needed for future expansion falls squarely upon the shoulders of the railway managements themselves. The investments are not to be commandeered; they are not to be taken by legislative enactment from the public treasury; they must be invited, they must be wooed and won by constructive means. Railway investment must be made attractive by means of an

adequate return upon the railway property devoted to the service of the public, and the first duty of railway managements, therefore, if they are to keep the railroads growing, is to be sure that earnings are kept at a standard commensurate with the earnings offered by other lines of business.

The public must be enlisted in this work, however, for the public regulates the railroads. It is an axiom that the right of regulation carries with it the duty to protect. Since the public has decreed that the railroads shall remain under private ownership and has retained the right to regulate service, rates and wages, then the public undoubtedly has assumed also the duty of seeing that the owners and bondholders of the railroads are adequately rewarded for the use of their money. Anything less would be confiscation. Anything less would be a betrayal of the country's own judgment in leaving the railroads under private control. Anything less would not allow the railroads to expand in accordance with the future needs of the country for railway transportation.

Emphasis on Future Needs

If the country is to go ahead, emphasis everywhere must be placed upon the future needs of the railroads. Foresightfulness on the part of the public must continue to be developed. The public must come to know the railroads intimately and to sympathize with their point of view. To bring such a situation to pass is the duty of the railway managements, and that happy result can be brought about only by a carefully considered and wisely administered policy of public relations. If the thought is traced to its ultimate conclusion it can be clearly shown that the future of the railroads under private ownership, private financing and public regulation depends entirely upon the understanding existing between the public and the railroads today.

The key to the future for the railroads is to win the public, just as their key to disaster in the past was to lose public confidence. The railroads, by bitter experience, have come to realize this and I do not believe that they will ever in the future stray away from the path of full, fair dealing with the public. An important part of every railroad's work in the future, taking rank with the running of the trains, will be the cultivating of that public confidence which, in the final analysis, is the fuel that keeps the trains running.

In closing allow me to leave with you the thought that the railroads have had nothing to lose and everything to gain by going to the public with their problems. Any business that is above board and clean can, it seems to me, do the same thing with results just as much to be desired. The public recognizes and appreciates fair dealing. It is willing to pay, and pay well, for fair dealing. The central theme of your meeting here refers to sound public opinion as "the nation's great reserve." Such a reserve as that is one which cannot be built up too large. Every act by a great corporation or any large business that demonstrates confidence in the people is a step toward wiping out the suspicion that has cost our nation so heavily in the past. The railroads have found that frankness and fair dealing toward the public pay dividends in fair treatment by the public. That lesson holds just as true for other large business organizations as it does for the railroads themselves.

"THE LAST ELECTION indicated a realization by a commanding majority of the American people that government ownership would destroy individual effort, initiative and enterprise; would eliminate competition, the greatest spur to progress; would decrease service and increase taxes; would revolutionize our social, economic and political principles; in fact would ruin our democracy and very possibly would lead to nationalization of all industries," declared C. E. Spens, vice-president in charge of traffic of the Chicago, Burlington & Quincy, in an address before the Quincy Freight Bureau at Quincy, Ill., on December 12.

Securing Effective Car Department Service*

A Further Discussion of "Milwaukee" Practices—The Importance of Intelligently Meeting Personnel Problems

By L. K. Silcox

General Superintendent Motive Power, Chicago, Milwaukee & St. Paul, Chicago

WORK COMING UNDER A. R. A. rules is of such large proportions that the importance of systematizing and organizing the work is very apparent to all concerned. In the past, much of the billing work consisting of transcribing records of various kinds on to the A. R. A. billing card, resulted in mistakes and misinterpretations because the transcribing was usually done by clerks who did not understand the work. At the larger points where many

material used from the slips made for drawing material, whereas others charge out the material from records of work done on the car. In the case of foreign car repairs it is possible to use the billing repair card when material is charged out as applied instead of as drawn in case the latter method is used.

The education of inspectors, checkers, repair men, etc., employed in handling foreign line repairs, should be followed

Form 55
CHICAGO, MILWAUKEE & ST. PAUL RAILWAY COMPANY
TO PUGET SOUND-ELECTRIFIED
CAR DEPARTMENT

FILED 1:49 A.M. DAILY TELEGRAPHIC REPORT OF BAD ORDER CARS ON HAND AND REPAIRED AT 6:00 P.M. LOCATION General Shops November 22nd 1924

LOCATION	NO. OF SYSTEM CARS LOADED AND EMPTY																		FOREIGN TANK CARS				FOREIGN TANK CARS AND SPECIAL EQUIPMENT				TOTALS						
	BOX		FURNITURE AND CHAIRS		AUTOMOBILE		REFRIGERATOR		VEGETABLE AND BEEF		STOCK SINGLE DECK		STOCK DOUBLE DECK		FLAT		COAL		DRE		CABOOSE		MILK AND MISCELLANEOUS		SPECIAL EQUIPMENT		LOADED		EMPTY				
	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs			
Repair Shop Belt	75	20			14	4	1				17	1			32		19	2	7		11		2		1		1	1	11		191	2	26
	39				1										5		74													119			
TOTAL	114	20			15	4	1				17	1			37		93	2	7		11		2		1		1	1	11		310	2	26

LOCATION	CLASS OF REPAIRS REQUIRED										CLASS OF REPAIRS MADE										THIS INFORMATION WILL BE SHOWN ON SATURDAY'S REPORT										SAFETY APPLIANCES					
	RUNNING		LIGHT		MEDIUM		HEAVY		REBUILT		TOTAL		RUNNING		LIGHT		MEDIUM		HEAVY		REBUILT		TOTAL		RUNNING		LIGHT		MEDIUM		HEAVY		REBUILT		TOTAL	
	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs	On Hand	Repairs		
Repair Shop Belt																																				
TOTAL																																				

INDIVIDUAL CAR NUMBER (SYSTEM ONLY) GIVEN. REBUILT HEAVY AND MEDIUM REPAIRS														
REBUILT - CLASS A					HEAVY - CLASS B					MEDIUM - CLASS C				
13740	502809	502553												
19536	500399	502896												
13264	500616	502337												
504874	503271	502885												
500744	501059	502137												
503113	501344	502523												
50458	502344	500726												
52136	502157													

NOTE:—This report should be made out daily, except Sundays and holidays, as required, showing the location of each car, repair class and number of men working on it. It should be forwarded to the Car Department, Milwaukee Shops, each morning, and then forward the report by mail, enclosing same in envelope, Form 158, Cars repaired and number of men working on Sundays and following holidays: New Year's, Washington's Birthday, Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas, are to be included in the report for the following day.

Signed J. Smith Foreman in Charge

Fig. 5—Daily Telegraphic Report of Bad Order Cars on Hand and Repaired at 6 P. M.

men are engaged and much foreign line work is done, it is possible to reduce the transcribing very materially by using the A. R. A. billing repair card as the original record, having it filled in by the car man or checked at the work and forwarding it to the central billing office for the usual collection. It is necessary to have what is termed the original record, which is to be filed at the point where the work was done and it is considered that this requirement is met by keeping a carbon copy of the A. R. A. billing card at the local points for this purpose.

The method of recording material applied to freight cars differs greatly on the various railroads. Some charge

*The conclusion of an abstract of a paper read at the regular monthly meeting of the Car Foremen's Association of Chicago, held December 8, at the Great Northern Hotel, Chicago. The first part of this paper appeared in last week's issue.

closely and traveling inspectors are found to be of very great importance in the proper handling of this work. Periodical bulletins should be issued from time to time showing recent interpretations of rules and also giving answers to all questions submitted to a central office by inspectors.

Bad Order Car Report

The practice of following up the bad order car situation is now practically the same throughout the country, the difference being only as to the matter of form and application of the data. This involves the question of classification and organization to handle the work and control the bad order situation. For the purpose of simplifying the matter, repair points can be classified, each having a stated output

often causes the foreman to feel that he has not been properly supported, resulting in his becoming indifferent as to the action necessary in subsequent cases. Care should be exercised to impress each supervisor with the necessity of applying the principles above referred to in each case and profit by the judgment of his superiors because the details differ materially in almost every case where discipline should be applied. On the other hand, when cases are appealed to higher authority, decision must be rendered in support of the foreman where the facts and policy of the management warrant the action taken. Then if leniency is to be applied, the employee involved should so understand and the foreman be informed so that he will appreciate his duty when other or similar cases arise.

If these few facts in connection with discipline are truly observed and applied in harmony with existing conditions, a reduction in labor turnover will be readily evidenced. Close observers realize the tremendous expense, many times avoidable, due to the unnecessary changing of labor forces. If an employee is to be dismissed, it should be apparent that the service is thereby benefited. Very frequently employees are taken out of service and the new men assigned prove inferior, which clearly indicates that it would be an advantage to the railroad to have kept the employee in service, especially if a method could be applied that would eliminate any undesirable characteristics that he may have acquired. In this respect there is an element worthy of consideration. We appreciate, I am sure, that there are men who are objectionable and a detriment, and of course they should in some way be dealt with and definitely removed, care being taken that they do not re-enter the service at some other point without satisfying the management of their intention and desire to function so that their employment will be acceptable and of interest to the service. Discipline resolves itself into a feature of management, which must be comprehended, but never compromised.

In closing, allow me to suggest a few seemingly important items, as a matter of illustration, to indicate the meaning of effective car department service and which embrace:

(A) An organization with fixed ideals of attainment, working together towards the accomplishment of that end and with the right sense and exercise of the importance of individual initiative and responsibility.

(B) The proper contribution towards safe and prompt train performance by obtaining maximum mileage per car per year with a minimum of detention en route due to inspection, physical defects or damage to lading, and at a minimum cost.

A Demonstration of the Value of Treating Cross Ties

A RECORD of tie renewals on the Fort Worth & Denver City since the time of its construction in 1882, affords an unusual opportunity to demonstrate the value of timber treatment. This railroad runs northwesterly from Fort Worth, Tex., through the northwestern part of the state to Sixela, N. M., a distance of 454 miles. The westerly half of the line traverses a country with an average rainfall of 22 in., while the easterly half of the line runs through a country with an average rainfall of 32 in. The main track is made up of the following weights of rail:

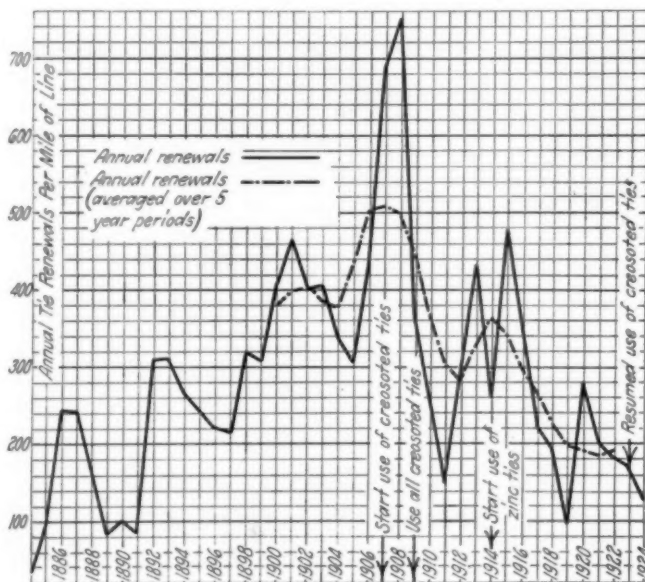
	Miles	Per Cent
90-lb. A. R. A Type A.....	88	19.4
85-lb. A. S. C. E.....	247	54.3
80-lb. A. S. C. E.....	13	2.9
75-lb. A. S. C. E.....	106	23.4

The line is ballasted as follows:

	Miles	Per Cent
Rock.....	162	35.7
Gravel.....	230	50.6
Cinders.....	3	0.7
Unballasted.....	59	13.0

About 1906 the railroad began installing tie plates in connection with its rail renewals and at the present time the line is practically 100 per cent tie plated.

There are 1,429,406 cross ties in the main line, the standard being 3,200 ties per mile. The standard tie in main line track is the A.R.E.A. Grade No. 3, (6-in. by 8-in. by 8-ft.) hewn tie. The ties average about 85 per cent southern yellow pine and about 15 per cent hard wood.



How the Use of Treated Ties Has Reduced the Average Annual Renewals

Table I shows the dates of construction of the original line of the Fort Worth & Denver City and of each extension and the number of ties placed in the track with each addition of mileage.

TABLE I

Year	Miles		Number of Ties	
	Constructed	Total Operated	Placed	Total in Track
1882	110	110	347,176	347,176
1885	34	144	106,073	453,249
1886	15	159	47,214	500,463
1887	118	277	372,054	872,506
1888	187	464	587,274	1,459,780
1890	5	469	15,392	1,475,172
1898	15*	454	45,766†	1,429,406

* Abandoned.
† Removed.

The original construction was of untreated pine ties. From 1891 to 1896, inclusive, the renewals were made with untreated oak, while from 1892 to 1906, inclusive, they were made with untreated pine. Beginning in 1907, the railroad started to apply creosoted ties and continued their application until 1914. The ties applied during this period were southern yellow pine. Beginning with 1914, the railroad resorted to zinc treatment, with southern yellow pine as before, using heart wood and continued this class of ties until 1923 when it returned to creosoted ties, having found these ties more economical than the untreated or the zinc-treated ties.

The ties treated with zinc chloride were impregnated with $\frac{1}{2}$ lb. of zinc chloride per cubic foot of timber, while those creosoted are treated with 5 lb. of creosote oil per cubic foot of timber, using the Rueping process. All ties are thoroughly air seasoned before being treated. They are

purchased and treated by contract, being secured principally in eastern Texas and in Louisiana.

Table II shows the actual tie renewals in main track by years, the percentage of renewals, the renewals per mile and the traffic density.

The annual renewals per mile have been plotted on the chart, together with figures representing the renewals per mile for each year, averaged with the corresponding renewals for the two years previous and the two years following. This is introduced to afford a curve which neutralizes the fluctuations in the annual renewals due to causes other than the rate of deterioration of the ties.

The years from 1882 to 1898 embraced the construction period during which the introduction of large quantities of new ties in the added mileage tends to vitiate the record of annual tie renewals, averaged over the entire system. For this reason the record may be studied in its relation to average life of ties only for the period subsequent to 1898. It is further necessary to leave out of consideration the extraordinary renewals in 1907 and 1909 owing to the fact that large ballasting programs carried out in those two years resulted in the removal of a large number of ties that might otherwise have remained in track a year or two longer. This is reflected in the marked decrease in tie renewals during the following two years. It also affords at least a partial explanation for the increase in renewals between 1913 and 1915, years which mark the end of the average life of the large number of ties inserted in 1907 and 1908.

TABLE II—RECORD OF CROSS TIE RENEWALS IN MAIN TRACK

Year	Renewals actual	Renewals per cent	Renewals per mile	Remarks
1882	0	0	..	.....
1883	0	0	..	.....
1884	2,600	0.7	24	Untreated.
1885	13,811	3.6	96	Untreated.
1886	38,750	7.7	244	Untreated.
1887	64,760	7.4	234	Untreated.
1888	81,464	5.6	176	Untreated.
1889	38,750	2.7	84	Untreated.
1890	47,500	3.2	101	Untreated.
1891	39,387	2.7	84	Oak untreated.
1892	144,651	9.8	309	Oak untreated.
1893	145,355	9.9	310	Oak untreated.
1894	124,707	8.5	266	Oak untreated.
1895	114,865	7.8	245	Oak untreated.
1896	103,424	7.0	221	Oak untreated.
1897	100,204	6.8	214	Pine untreated.
1898	144,782	10.1	319	Untreated.
1899	138,785	9.7	306	Untreated.
1900	185,188	13.0	408	Untreated.
1901	210,900	14.8	464	Untreated.
1902	181,959	12.7	401	Untreated.
1903	184,452	12.9	406	Untreated.
1904	153,861	10.8	339	Untreated.
1905	138,755	9.7	306	Untreated.
1906	196,130	13.7	432	.....
1907	314,042	22.0	691	54,175 Creosoted—259,867 Untreated.
1908	340,931	23.9	751	193,237 Creosoted—147,694 Untreated.
1909	163,986	11.5	361	All creosoted.
1910	114,682	8.0	253	All creosoted.
1911	68,474	4.9	151	All creosoted.
1912	139,619	9.8	307	All creosoted.
1913	197,011	13.8	414	All creosoted.
1914	118,521	8.3	261	56,904 Creo.—12,544 Zinc tr., 49,073 untr.
1915	216,951	15.2	478	90,207 Zinc tr., 126,744 untr.
1916	153,819	10.8	339	All zinc tr.
1917	100,676	7.0	222	All zinc tr.
1918	86,562	6.1	191	All zinc tr.
1919	43,014	3.0	95	All zinc tr.
1920	127,455	8.9	281	All zinc tr.
1921	91,045	6.4	206	All zinc tr.
1922	82,426	5.8	182	All zinc tr.
1923	77,947*	5.5	172	All creosoted.
1924	56,521*	4.0	127	.....

*Estimated.

The first evidence of any effects of the change to creosoted ties in 1907 must be looked for about seven years later, or at the time that untreated ties would have been coming out of the track if they had been used instead of the creosoted ties. It is clearly seen from the chart that subsequent to 1914 and 1916 there has been a marked reduction in the average annual renewals per mile. Obviously the curve for the five year averages can not be shown later than 1922,

but with the continuation of the favorable record obtained during the past four years, a further descent of the five year average curve is to be anticipated.

Freight Car Loading

WASHINGTON, D. C.

FREIGHT CAR LOADING in the week ended December 6 indicated the usual seasonal decline for this part of the year but the total 968,256 cars was still 54,335 cars in excess of the loading for the corresponding period of last year and 59,082 cars in excess of that for 1922. Increases as compared with last year were shown in all districts and in all classes of commodities except coke and ore, while coal loading showed an increase of 20,098 cars and miscellaneous loading an increase of 21,906 cars. Loading of coal and coke, however, was below that for the corresponding week of 1922. The summary as compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING—WEEK ENDED DECEMBER 6, 1924

Districts	1924	1923	1922
Eastern	224,064	222,413	229,149
Allegheny	188,872	185,025	197,375
Pocahontas	47,949	37,314	31,939
Southern	154,096	134,992	109,274
Northwestern	119,326	119,243	109,274
Central Western	155,596	149,063	150,383
Southwestern	78,353	65,871	56,712
Total Western	353,275	334,177	316,369
Commodities			
Grain and grain products	54,024	51,667	55,412
Livestock	42,963	42,936	37,603
Coal	193,256	173,158	197,818
Coke	10,895	11,393	13,015
Forest products	73,286	64,741	62,655
Ore	10,491	11,716	10,168
Miscellaneous	249,034	245,909	227,038
Total	968,256	913,921	909,174
November 29	878,631	835,081	840,412
November 22	1,010,122	990,299	946,642
November 15	1,015,704	992,050	957,564
November 8	994,504	1,036,221	944,186
Cumulative total, January 1 to date	46,023,810	47,419,310	40,797,973

The freight car surplus in the period December 1 to 7 increased to 208,451 cars, including 81,875 box cars and 95,961 coal cars.

For the Canadian roads the surplus was 13,900 cars including 10,300 box cars.

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended December 6 totalled 60,915 cars, a decrease of 4,036 from the previous week and a slight increase over the same week last year. Although navigation is still partially open the grain movement is slackening and is not being offset by an increase in transportation of coal. Merchandise and miscellaneous freight also showed small declines but other commodities showed little change. With a lighter harvest grain loading was less than last year by 4,379 cars, but the loss was more than made up by gains in live stock, coal, lumber, pulpwood, ore and merchandise.

	For the Week Ended		
	Dec. 6, 1924	Nov. 29, 1924	Dec. 8, 1923
Total for Canada			
Commodity			
Grain and grain products	12,991	15,229	17,370
Live stock	3,521	2,982	2,963
Coal	7,404	7,831	5,875
Coke	336	375	212
Lumber	3,425	3,664	3,069
Pulpwood	1,501	1,550	1,379
Pulp and paper	1,836	2,089	1,976
Other forest products	2,403	2,409	2,377
Ore	1,178	1,135	755
Merchandise, L.C.I.	15,257	15,612	14,415
Miscellaneous	11,063	12,075	10,254
Total cars loaded	60,915	64,951	60,645
Total cars received from connections	30,980	31,334	31,666
Cumulative totals to date—1924			2,765,967
1923			2,697,269

Supplemental Report on Cleveland Collision

WILFRED P. BORLAND, director of the Bureau of Safety of the Interstate Commerce Commission, has issued a supplemental report on the collision between a westbound passenger train and an eastbound freight on the Southern Railway near Cleveland, Tenn., a year ago (September 28, 1923), when a trainman was killed and 26 persons were injured. This collision was reported in the *Railway Age* of November 24, 1923.* On this line of road the manual block system is in use but in this case the passenger train was ordered to proceed from the Cleveland station nearly a mile, to the end of the yard, there to wait for an eastbound freight, its clearance card giving it the right to proceed (out of the yard) after the arrival of the freight. The train left the station on this order, and no care was taken to see whether the freight had arrived; it had not arrived, and the collision resulted. The freight trainmen also were at fault.

The final conclusion of the inspector in his report at the time was that, allowing the train to thus run a mile beyond the block station was an improper use of the block system, doing away with the benefit of the protection of that system; and the principal point in the supplemental report is that no change has been made in the operation of the block system, and none is contemplated. The practice condemned is still common. Attention is called to a similar case on the Chicago, Burlington & Quincy near Meadville, Mo., on January 4, 1923. [The reader will recall that the *Railway Age* called attention also to a similar case at Nashville, Tenn., in July, 1918, when 101 persons were killed.] In conclusion the present report says, "The situation at Cleveland is such that it is often a matter of difficulty for the crews of departing trains to know whether or not the opposing train has arrived and entered the yard. If, however, operating reasons should make it a matter of necessity to advance trains to outlying switches, further protective devices are needed to enable the block operator to retain control of the movement."

Railway Business Association Annual Meeting

THE ANNUAL MEETING of the Railway Business Association was held on Thursday, December 11, at the Hotel Commodore, New York.

Resolutions were adopted urging further trial of Sec. 15a of the Transportation Act unamended; deploring pressure upon the Interstate Commerce Commission in rate cases; favoring continuance of federal control over state-made regulations affecting railway rates and service; opposing the compulsory consolidations of railways; insisting that the public should be represented in whatever agency for the adjustment of railway labor disputes Congress may maintain or create; opposing ratification of the 20th or so-called "child labor" amendment of the federal Constitution; and urging a maximum income surtax rate not exceeding 15 per cent.

Officers were elected as follows: President—Alba B. Johnson, Philadelphia; vice-presidents—J. G. Platt, Boston; William E. Sharp, Chicago; S. L. Smith, Cleveland; Samuel

M. Hastings, Chicago; B. L. Winchell, New York; E. M. Zehnder, Scranton, and J. M. Davis, New York; treasurer—P. Harvey Middleton, Philadelphia.

President Johnson announced that only two changes will occur in the list of executive members who are appointed by the president and who together with the president and vice-presidents constitute the general executive committee—C. J. Symington, retiring vice-president, taking the place vacated by the promotion of Mr. Davis to a vice-presidency and David W. Pye of New York taking the place of E. J. Kearney of Milwaukee, resigned. The secretary, Frank W. Noxon, holds office during the pleasure of the general executive committee.

The resolutions adopted were ten in number and were as follows:

RESOLUTIONS.

I.

We congratulate the shippers and carriers upon the excellent transportation service rendered in 1924. Peak traffic scoring almost if not quite a record was carried with practically no car shortage. This result reflects continued improvement in railway efficiency, maintenance of the shippers' new high standard in car loading and use of cars and a remarkable advance in methods of car distribution achieved jointly by shippers' regional advisory boards and carriers. All signs and the lessons of history point to another great increase in volume of traffic in 1925. The whole country will benefit by the program of capital outlays announced by the railways in preparation. We pledge our best efforts to the preservation of a governmental policy calculated to sustain investors' confidence in the railway security issues essential to these improvements.

II.

We urge further trial of Sec. 15a of the Transportation Act unamended. The investment world believes this section as it now stands to be an assurance by the government that the railroads will be permitted an opportunity to earn a return warranting the purchase of new securities by investors. To sustain railway credit it is essential to leave that confidence undisturbed. If amendment were undertaken at this time the public would forecast radical action by Congress. No improvement in this financial section of the act will yield the country so much benefit as stability.

III.

We commend the courage and fidelity of the Interstate Commerce Commission in resisting group pressure in rate cases. We deplore attempts of spokesmen for particular adjustments to extort decisions by exertion of influence, directly or through legislation and whether political, agricultural, commercial or industrial. Efforts have long persisted to obtain from the commission against its judgment a change of policy affecting the rate relation between different classes of traffic. In his message the President intimates that this effort is now untimely. It should cease altogether. Independent commissioners are essential to the success of railway regulation. We must consider the future. Strong men will not serve upon a subjugated tribunal. We urge that advocates restrict themselves to the orderly procedure before the commission.

IV.

We oppose any step backward from Federal control of State-made regulations affecting railway rates and service. The dominant aspect of shippers' needs is national. Responsibility for meeting these needs must be unified and hence Federal. We welcome the progress which has been made in co-operation of State commissions with the Interstate Commerce Commission. It is evident that satisfactory consideration of State-made regulations in their relation to interstate commerce is feasible under Federal control.

V.

With special satisfaction we note that the Interstate Commerce Commission and the Association of Railway Executives are co-operatively studying the stabilization of employment and purchases. Railway reserves can be created in good years for maintenance deferred until dull years, when lower costs naturally prevail. Credit can be built up in prosperity for financing capital improvements in depressions. Such a course would reduce the cost of railway capital and of railway operation. It would prevent, mitigate or curtail general business distress. Above all it would diminish the calamity which industrial depression inflicts upon the farmers through collapse of their domestic markets and upon industrial employees through shop shut-downs due to stoppage of railroad orders.

*Other supplemental reports are listed below.

Road	Place	Date	Reported in <i>Railway Age</i>	
			Original Report	Suppl'tal Report
A. T. & S. F.	Cajon, Cal.	July 15, '23	July 5, '24	Oct. 18, '24
N. Y., N. H. & H.	Readville, Mass.	Sept. 11, '23	Nov. 24, '23	Oct. 18, '24
Union Trac'n.	Ingalls, Ind.	Feb. 2, '24	May 3, '24	Oct. 25, '24
Southern	Cleveland, Tenn.	Sept. 28, '23	Nov. 24, '23	Dec. ..., '24

VI.

We oppose the compulsory consolidation of railways.

VII.

We insist that the public should be represented in whatever agency for the adjustment of railway labor disputes Congress may maintain or create. The public interest is paramount. The public requires uninterrupted service. Railway labor cost is the major item in the transportation cost paid by the public. To exclude the public from the tribunal is to weaken the force of public opinion; it is to revive the strike or the threat of a strike as a factor in forcing the railroads to terms which the public must pay. Congress should respond to the national demand that fair treatment of the users and employees of the railways alike shall be assured without domestic warfare actual or threatened. The Howell-Barkley bill should be defeated.

VIII.

We oppose ratification of the 20th or so-called "child labor" amendment of the Federal Constitution. The authority which this provision would bestow upon Congress is aimed at conditions which have been disappearing or are rapidly disappearing under State laws and voluntary action. There is no reason for Federal action. We deplore the tendency toward further centralization of government activities affecting the citizen in his occupation. Under this amendment, moreover, Congress could displace the parent to a degree exceeding what has been done or ever ought to be done by any State. It would also authorize Congress to force into idleness youths between 14 and 18 for whom suitable work is the only available form of education and discipline, while tending to weaken the effectiveness of State and local influences which are adapted to regional conditions. We want not more government interference with the citizens but less.

IX.

Further reduction of Federal taxes should be accomplished as early as practicable. The revision of 1924 was vitiated and limited as a result of appeals to ignorance, prejudice and envy. The campaign, primaries and elections showed that Congress had mistaken the national will. The tax objective desired by the country is to relieve industry and reduce living costs while realizing revenue for the government by inducing possessors of large incomes to invest in taxable enterprises of agriculture, industry, commerce and transportation. We urge a maximum income surtax rate not exceeding 15 per cent which competent authorities assert will yield more revenue than any higher rate.

X.

The Railway Business Association in annual meeting at the Commodore sends cordial greetings to the distinguished audience gathered at the Waldorf in honor of our fellow-member, Owen D. Young. We heartily join in their praise and thanks to this useful citizen of America and the world who has served so well our country and mankind.

Increased Appropriation Urged for Valuation Work

WASHINGTON, D. C.

SENATOR CUMMINS, who is actively interesting himself in the efforts of the Interstate Commerce Commission to obtain a larger appropriation to enable it to expedite its valuation work, on December 12 introduced in the Senate a resolution expressing the sense of the Senate that the commission should be allotted sufficient funds for this purpose to complete the work in two years, and requesting the Bureau of the Budget and the President to recommend an increase in the valuation appropriation for the fiscal year 1926 from the \$1,000,000 now recommended to the \$2,369,626 which the commission asked. The resolution points out that an up to date valuation is necessary for the proper administration of the Transportation Act and particularly refers to the possibility of collecting large sums from the carriers under the terms of the recapture clause.

Senator Cummins was asked to assist in obtaining larger appropriations for the commission by a committee of the National Industrial Traffic League, for which he made an appointment with the President to discuss the matter on

November 26. A committee of the league earlier in the year had presented both to the budget bureau and to the President arguments from the standpoint of the shipping public for larger appropriations for the commission, and in the estimates of the bureau recently transmitted to Congress by the President an increase was recommended from the \$4,339,000 originally recommended for the commission to \$4,913,500, but this was still \$2,450,996 below the commission's estimate and included only \$1,000,000 for valuation work, or about the amount which was available for the present fiscal year.

While the field work of the valuation bureau was in progress Congress regularly allowed approximately \$3,500,000 a year for valuation work but about the time this curtailment of the scope of the work admitted of a considerable reduction in the appropriations the budget bureau and Congress began to limit the amounts allowed to a point where, according to the commission, the work of producing results in the way of reports for the work of the preceding ten years has been seriously interfered with. The situation has been especially complicated by the fact that while the valuation bureau was struggling to complete its underlying reports as of the valuation dates, Division 4 of the commission has taken the services of a large part of the force to try to produce up to date figures for recapture purposes.

The National Industrial Traffic League committee was interested not only in the appropriations for valuation but also in increased funds for the general work of the commission, in which shippers are especially interested because reduced forces have tended to increase the time required to get decisions in rates cases, but Senator Cummins' resolution indicates a belief that the possibility of enabling the commission to collect some large sums from the carriers may have a stronger appeal to members of Congress than its desire for more money for other purposes. The resolution is confined to the appropriation for valuation, although the budget bureau estimate is much less than that of the commission for several other branches of its work. Whereas it had asked for \$2,318,660 for general purposes the bureau recommended only \$2,100,000. For the work of the Bureau of Accounts the commission asked \$1,189,670 and the bureau recommended only \$600,000. For work relating to safety and signal and train control devices the commission asked \$687,040 and the bureau recommended \$500,000. For locomotive inspection the commission asked \$500,000, which the bureau reduced to \$450,000 and for printing and binding the commission asked \$160,000 while the bureau recommended \$124,000.

The text of Senator Cummins' resolution, which was referred to the committee on interstate commerce, is as follows:

Whereas the budget for the fiscal year ending June 30, 1926, allots \$1,000,000 to enable the Interstate Commerce Commission to carry on the work of the valuation of common carriers subject to the act to regulate commerce approved February 4, 1887, and all the amendments thereto; and

Whereas it is estimated by the Interstate Commerce Commission that it will require, to complete that work within two years the sum of \$4,148,300, and that of said aggregate sum of \$2,369,626 should be expended in the year ending June 30, 1926, and \$1,778,674 in the year ending June 30, 1927; and

Whereas it is of the highest importance to the people of the country that the work of the Interstate Commerce Commission in that regard shall be completed at the earliest possible moment inasmuch as the ascertainment of the value of the properties of these common carriers must furnish the basis for the making, adjustment, and readjustment of the rates for transportation; and

Whereas it is estimated by the Interstate Commerce Commission that under the provisions of paragraph 6 of section 15a there was due at the close of the calendar year 1923 to the United States from certain of said common carriers the sum of \$69,068,000 divided as follows: For the year 1920, \$5,568,000; for the year 1921, \$12,500,000; for the year 1922, \$15,000,000, and for the year 1923, \$36,000,000, to which must be added a very large amount as the Government's share of the excess earnings for the year 1924; and

Whereas it is impossible for the Interstate Commerce Commission to demand and collect any part of said sums until the valuation of the properties of the common carriers which owe these sums is completed; and

Whereas many activities of the Interstate Commerce Commission depend upon the completion of the work of valuation: be it therefore

Resolved, That it is the sense of the Senate that the Interstate Commerce Commission should be allotted sufficient funds to carry on the work of valuation with the greatest possible expedition; be it further

Resolved, That the Director of the Budget is earnestly requested to review this subject and to recommend to the President of the United States an enlargement of the sum allotted to the Interstate Commerce Commission for the year ending June 30, 1926, to at least \$2,369,626, and if that be done the Senate respectfully asks the President of the United States to consider favorably the supplemental report of the Director of the Budget.

The Senate committee on interstate commerce at its meeting on December 16 ordered a favorable report on the resolution with an amendment in the preamble referring to the completion of "the primary valuations" within two years, instead of "that work."

Safety Conference Considers Grade Crossing Problem

WASHINGTON, D. C.

A DECLARATION that state regulatory agencies should be clothed with authority to declare certain railroad-highway grade crossings dangerous and require all motorists to stop upon approaching them was one of a series of recommendations adopted by the National Conference on Street and Highway Safety, on December 16, at the concluding session of a two-day conference at Washington called by Secretary Hoover. The recommendations consisted of a consolidation, with some modifications, of the recommendations submitted in advance by eight committees. The conference also adopted a resolution to give continuity to the work it has undertaken, providing for a second conference to be called about a year hence, that a committee be appointed by the Secretary of Commerce to continue the studies already undertaken, and that a public relations committee should take up the task of promoting the program outlined by the conference. The grade crossing recommendation was adopted only after a discussion participated in by several of the numerous railroad officers present but was finally accepted by them in lieu of the proposal offered by C. L. Bardo, general manager of the New York, New Haven & Hartford, that the conference go on record as endorsing the principle of "stop" laws for all crossings such as have been enacted in some of the states.

Frank Page, highway commissioner of North Carolina, opposing this proposal, declared that the law "does not prevent accidents." He said that the reduction of accidents in North Carolina was due to the elimination of 308 grade crossings since 1921. He said he was in favor of submitting a proposition to the railroads that "when the highways carry more people across a given highway crossing than the railroads, the railroads stop their trains."

The proposed indorsement was also objected to by H. W. Baker of the New York State Automobile Association, who declared that the stop law would seriously impede highway traffic in that state.

C. E. Rueh of the public utilities board of Kansas, citing the experience of Oklahoma, declared at length that the measure would save lives. His position was supported by E. R. Cott of the Ohio Association for the Prevention of Grade Crossing Accidents, and W. T. Anderson of the State Highway Board of Georgia.

F. T. Singleton, of the Indiana Public Service Commis-

sion, offered as an alternative to Mr. Bardo's proposal, a suggestion that there should be placed in the hands of state authorities the power to designate dangerous grade crossings at which motorists must stop.

This position was endorsed by C. E. Hill of the New York Central lines, who declared that "we are here to protect those unable to help themselves," and who cited figures of 400 persons killed and 1,100 injured by running into the sides of moving trains.

H. G. McKennon of the Norfolk & Western discussed at length the value of the stop law, declaring among other things that if North Carolina enforced its stop law, previous statements about its efficacy would be disproved.

The recommendations adopted which apply to grade crossings are as follows:

Grade Crossings

Elimination of grade crossings, either by relocation of highways or rail lines or by grade separation, constitutes the only perfect solution of the grade crossing problem. It should be carried on under a proper program, first eliminating the most dangerous crossings on thoroughfares carrying heavy traffic. This is made difficult by the enormous costs involved, and, if attempted on a wholesale scale, would impose an excessive financial burden resting in the last analysis upon the public. It is, therefore, necessary that the program, having due regard to the relative costs and advantages of grade-crossing elimination and other methods of protection, be given the most thorough joint consideration by proper authorities. In laying out new highways the question of so locating them as to avoid railway grade crossings to the greatest possible extent should be carefully considered.

Relocation of highways offers many possibilities not yet fully developed which should be worked out by the state authorities, in co-operation with the railroads. Authority to order grade separations or proper protection at grade crossings should be vested in the state commission having jurisdiction over the railroads, which should also determine and enforce a proper division of the costs between the railroads and the public. The state highway department should have the authority to plan the improvements and to initiate the proceedings for all highways under its jurisdiction. Time is an essential element and a prompt decision should be provided for in the law.

Properly designated state commissions should be empowered to designate dangerous grade crossings at which motorists must stop.

The elimination and protection of grade crossings are of such importance and involve to such an extent the public safety as to require that priority be given to them, in the allocation of capital funds by the railroads, and of public moneys for highway building over expenditures for other safety measures designed to protect the public.

Railroad crossings remaining at grade should be safeguarded in every reasonable way. Standard warning signs and pavement markings should be used to mark the approach to all public railroad crossings. Where the volume of traffic requires it additional protection should be afforded by the use of flagmen, gate, or approved electric or mechanical devices.

Sharp curves, abrupt changes of grade, roughness in the pavement, or other conditions at or near the tracks which tend to divert the attention of the motorist should be avoided.

The spotting of cars near unprotected crossings by railroads should not be permitted.

Unless full-stop is required by law vehicles should not be permitted to exceed a speed of 15 miles per hour when approaching within 100 feet of any railroad crossing. There should be a penalty enforced against a motorist who disobeys a clearly visible and positive signal to stop at a grade crossing.

THE ASSOCIATION OF SURGEONS of the Seaboard Air Line has chosen as its president for the ensuing year Dr. S. E. Harmon of Columbia, S. C.

THE BALTIMORE & OHIO has scheduled a special train to Washington from Chicago for the Hamilton Club of that city on March 2 when the members will attend the inaugural ceremonies for President Coolidge and Vice-President Dawes. The special train will leave Chicago at 2:30 p. m. on March 2 and will arrive at Washington the following morning at 10:30. Returning, the train will leave Washington at 1 a. m. on March 5 and arrive in Chicago at 7 p. m. the next day.

Lubrication of Locomotives and Cars*

Subject Considered Primarily from the Standpoint of the Operating Department

By Dennistoun Wood

Engineer of Tests, Southern Pacific, San Francisco, Cal.

THE FUNCTION OF RAILROADS is to move freight and passengers from place to place and to move them quickly and on time. This must be done at the lowest cost consistent with good service. Power is required to move the trains, overcoming grade, wind and frictional resistances. This last is made up of the rolling friction of the wheels, and sliding friction of the journals on cars and locomotives and moving parts of the locomotives. If this sliding friction can be reduced we reduce one of the factors of train resistance and hence cut down cost of power. This reduction of friction is accomplished by the use of the proper lubricating materials, one very vital reason why the operating department is interested in lubrication.

If bearings under heavy load are run at any speed, lubrication has to be furnished or hot bearings result and, if allowed to run hot long enough, trouble is experienced. On trains, neglected hot car bearings result in burning off the journals. On locomotives a similar condition may be set up and further, there is the chance of having hot crank pins, hot guides, hot eccentrics, etc. These hot bearings must be seen to or they may result in accidents and if they have to be taken care of on the road it means lost time to the trains. Furthermore, hot bearings mean damaged and scored parts and the tying up of equipment for repairs when it should be earning money. These, then, are further reasons why the operating department is interested in lubrication.

The primary interest in lubricants for rolling stock on the part of the operating man is whether they are materials that will enable him to get trains over the road on time, in safety and without damage to the equipment. If he shows an interest in the physical or chemical make-up of the lubricating materials, it is because he is trying to insure obtaining proper materials for the accomplishment of his main objective as already referred to and to do this at a reasonable cost.

No explanation need be made as to why train delays are a serious and expensive matter. The delayed train is a thorn in the flesh of the operating or traffic man. Passenger trains chronically late are about as bad an advertisement as a railway can have. Delayed mails have to be avoided wherever possible. Late freight trains cause complaint, particularly if they are fruit trains or time freights. A delay to one train no matter what its class usually means delays to other trains.

A fruitful source of delays is the hot box. It is most disheartening to get reports day after day showing trains delayed because of hot boxes on cars, hot driving boxes or hot crank pins. Such causes of delays in most cases can be prevented if the proper materials are supplied and properly applied. Of course bearings will heat in spite of all precautions; linings will slip and we will always have the hot journal with us but the trouble can and should be kept to a minimum.

To keep journals cool, the first requisite is securing lubricating materials of such a character that, if properly applied, good lubrication is obtained. In doing this the matter of cost must be borne in mind, although quality must not be sacri-

ficed. It is necessary to see that the proper appliances are furnished to apply the lubricants and last but not least, see that the materials and appliances are properly used by the men.

On locomotives we use valve oil for the cylinders and valves, grease for the driving axle journals and crank pins, engine or car oil for the engine truck and trailing axle journals, and tender axle journals and for the valve motion pins, guides, etc. Sometimes an air compressor oil is used for the air brake pumps, sometimes valve oil.

The use of superheated steam is being more and more extended and this has necessitated a special grade of valve oil. Some roads now carrying two grades, one for saturated steam locomotives and one for superheated steam. Other roads use the superheated grade of valve oil for both classes of locomotives with good results. The argument for one grade of oil is that with two grades there is a chance of getting the wrong grade on the locomotive. Oil suitable for saturated steam will not give satisfaction with superheated steam while on the other hand superheated steam valve oil can be used satisfactorily with saturated steam. Valve oil for use with superheated steam should have a minimum flashpoint of about 575 deg. F. and a minimum fire point of about 650 deg. F. Its viscosity at 210 deg. F. will lie between 165 and 230 seconds Saybolt Universal.

The old practice was to lubricate the driving journals and crank pins with oil but modern practice calls for grease lubrication. On some roads two kinds of grease are used, one for driving journals and the other for crank pins. Other roads use one grade of grease for both purposes.

It is difficult to get a grease that is just right. The grease must not get too soft when hot or it melts away, resulting in excessive use of grease and possible delay due to lack of grease and resultant hot boxes. On the other hand it must not be so hard that it will carbonize and glaze on the surface as this means no lubrication and results in hot boxes. What we ask for is a happy medium.

I spoke of using engine oil or car oil on locomotives. Some roads carry these two classes, using engine oil, as its name implies, on the engine and car oil on car journals. Other roads use one grade of oil for both purposes. My experience is that a good grade of car oil will answer for both purposes. Engine oil is supposedly a better grade of oil than car oil. The engine oil or the car oil, as the case may be, is subdivided in general practice into winter grade and summer grade oil. Winter grade oil will have a slightly lower viscosity and flash point than summer grade oil. Average figures for these oils are: Winter grade, viscosity 50 to 55 seconds; Saybolt Universal, flash 300 to 350 deg. F.; summer grade, viscosity 65 to 70 seconds; Saybolt Universal, flash 300 to 400 deg. F.

The cold test is also important. The winter grade should show not over 0 deg. F., while the summer grade may be as high as 35 deg. F. What I have already said regarding car oil for use on locomotives covers this same grade of oil when used on car journals.

On both locomotives and cars a special grade of oil is used for lubricating air brake triple valves. It must be of such nature that these delicately adjusted valves will not gum up and stick. In the air brake cylinders a lubricant must

*Abstract of a paper presented at a joint meeting of the Pacific Railway Club and the San Francisco Section of the American Society of Mechanical Engineers, held on November 20, at the Elks Club, San Francisco.

be used that will keep the leather packing soft and assure satisfactory operation.

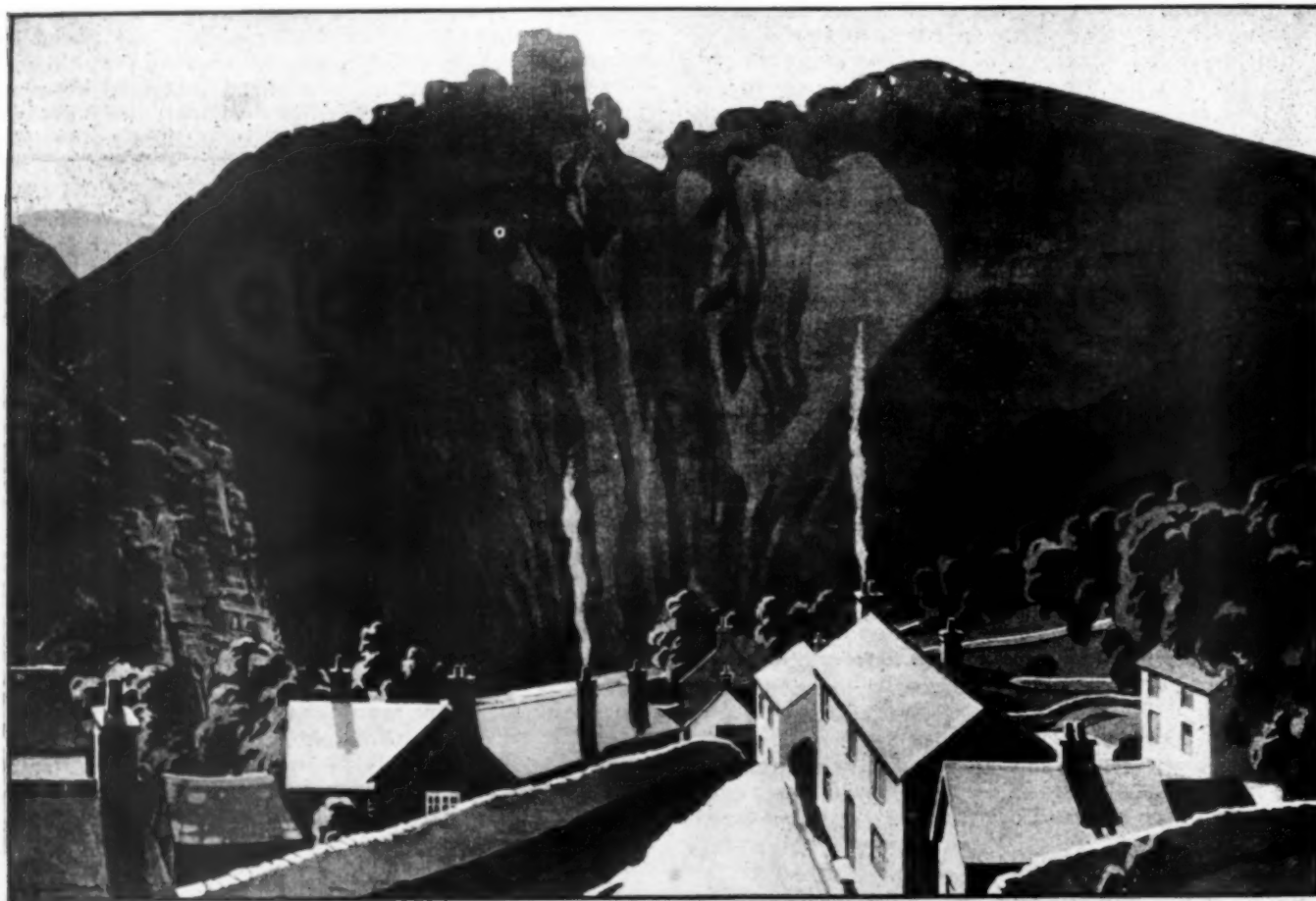
If we get oils and greases that lubricate, and further, if we get proper waste, have properly designed grease cellars, lubricators, etc., that will put the lubricants where they belong, it is evident that the next point to consider is the human element. We must prevent man failures. If we have the best oil in the world and it does not reach the journal, a hot box will occur. Each supervisor must be constantly on the watch to see that his men are packing journal boxes properly, placing the waste in them correctly, putting grease in pin cups when needed, seeing that grease cellars are free to move, keeping grease clean, etc. By constant supervision, delays from hot journals can be kept to a minimum.

Sometimes lubricants are purchased on a guarantee basis, the manufacturer guaranteeing a certain minimum mileage per unit quantity of lubricant. Sometimes the lubricants are purchased under specification. It is a matter of opinion which is the best method. Frequently road service tests are made to determine which of several brands of lubricants are best suited for use. If two brands are found equally good then price determines. If lubricants are purchased to specifications the manufacturer is usually anxious to meet the specification and go it one better for he knows that a poor showing of his material is a good indication of placing con-

tracts elsewhere, even though he is not responsible for the specification.

Many probably wonder why the railroads continue to use the old style journal bearing when the roller or ball bearing is used so generally. Others no doubt know that roller bearings are used to a large extent under cars in Sweden and that several test cars have been so equipped in this country. The reports made on these cars indicate a tremendous decrease in frictional resistance. I think what prevents the more general introduction of the roller bearing is that it appears somewhat complicated. The present bearing is extremely simple and with the class of labor found about car yards it is well to keep things as simple as possible. It is my belief however that with increasing loads, larger units of power and higher cost of fuel, the latter calling for resistance reduction wherever possible, changes will come in design of bearings and their lubrication. Eventually we will have car journals with roller bearings and driving boxes will have some form of force feed lubrication.

After a train is properly lubricated and on the road, it cannot be expected to take care of itself. The crew must be watchful. If they find indications of hot journals they must take immediate steps to stop the trouble. Many a serious delay could have been avoided by proper care on the part of the crew.



LMS THE PEAK DISTRICT

PEVERIL CASTLE

BY L. CAMPBELL TAYLOR, A.R.A.



One of a Series of Colored Posters, Size 40 in. by 50 in., Prepared for the London, Midland & Scottish Railway by Famous British Artists

General News Department

The city council of Litchfield, Ill., has designated every railroad grade crossing in the city as a boulevard stop.

The law of Georgia requiring automatic doors on the fire boxes of all locomotives has been made the subject of equity suits in the federal court by the Atlantic Coast Line and the Seaboard Air Line, challenging the constitutionality of such a requirement.

A suit to annul the recent sale of the Chicago, Peoria & St. Louis was entered in the circuit court at Springfield, Ill., on December 12 by a citizens' committee, representing towns along the line of the railroad. The bill declares that a buyer with a cash offer for \$3,000,000 for the road in its entirety has been found and is willing to take over and operate the line. The identity of the prospective buyer was not divulged.

The Texas Council of Safety, which aims to secure remedial legislation in Texas this winter on the problem of grade crossing dangers, held a two-day meeting at Austin on December 4 and 5, with an attendance of about 75 to 100. Permanent organization was effected, with C. E. Gilmore of the Railroad Commission as president, and Gib Gilchrist, secretary, both of Austin. Addresses were made by President Gilmore, by two railroad officers, W. R. Scott and H. M. Mayo, both from the Southern Pacific, and by E. W. James, R. M. Hubbard, G. W. Butler, A. R. Losh, Prof. S. M. N. Marrs, Mrs. S. M. N. Marrs, J. H. Connell and others.

State of Illinois Seeks to Enjoin

I. C. Against Building Cut-Off

The attorney general of Illinois has brought suit in the Superior Court at Chicago to enjoin the Illinois Central from constructing its proposed 169-mile cutoff from Edgewood, Ill., to Fulton, Ky. The case was argued on December 17. This suit was brought at the instance of citizens of Cairo and other towns on the main line of the Illinois Central who claim that the proposed new line would become the main line, to the detriment of their service. This claim was emphatically denied by Charles H. Markham, president of the road.

Record Freight Traffic in October

The greatest freight traffic for any one month in history was carried by the railroads in October. The total was 43,109,743,000 net ton miles, exceeding by 424,835,000 net ton miles, or one per cent, that for August, 1920, which had marked the previous high record for any one month. Compared with October last year, this was an increase of 900,072,000 net ton miles or 2.1 per cent.

This record freight movement was handled by the railroads without transportation difficulty. While loading of revenue freight in October averaged more than 1,090,000 cars weekly the railroads were able to move the business without a car shortage. In fact there was a daily average of nearly 100,000 surplus freight cars and approximately 5,000 serviceable locomotives in storage.

The freight tonnage record in the Eastern district showed a decrease under October, 1923, of 1.2 per cent, but in the Southern district there was an increase of 2.5 per cent and in the Western an increase of 6.3 per cent.

Burlington Train Robbers, Freed from

Federal Prison, Held by State

Keith Collins and Fred E. Poffenbarger, two of the participants in the robbery of a Burlington mail train at Council Bluffs, Ia., on November 13, 1920, in which several million dollars in currency and bonds was carried off, are being held at Kansas City, Kans., following their release from Leavenworth federal prison, to answer to pending indictments grow-

ing out of the holdup. These men were released on December 3 on writs of habeas corpus granted by Judge Pollock. They were taken into custody at the gate of the penitentiary and brought to Kansas City. Poffenbarger had been sentenced to 18 years on each of six counts and Collins to 15 years, the sentences to run concurrently. Judge Pollock held that five years was the limit on each count and that they had served their terms, and he ordered their release. A deduction in time was granted for good behavior.

Train Control Proprietors to Amalgamate

Preliminary steps toward the organization of the Amalgamated Train Control Sales Corporation were taken at a meeting of representatives of train control companies and proprietors of train control devices held at Washington on December 15. It is proposed to give the sales corporation the exclusive sales and production agency for the various companies under a co-operative plan by which the railroads may be offered the benefit of any combination of the devices and patents controlled by the different companies, which are not to lose their identity. A committee was appointed, with James William Bryan of Washington as chairman, to work out further plans and take the necessary steps toward incorporating the company, and another meeting will be held about January 1. The railroads have been asked to appoint a board of engineers to meet with a board of engineers representing the train control companies in an effort to work out, by combination of the various patents, a device which will meet the requirements of the roads and of the Interstate Commerce Commission. The committee of railway executives has promised to co-operate in any way that seems advisable.

Reduction in Personal Injuries

T. H. Carrow, chairman of the committee on statistics of the Safety section of the American Railway Association, reports that the number of employees killed on the railroads of the country in the first eight months of this year, 993, is 25 per cent less than the total number for the same months in 1923; and injuries decreased in about the same proportion. The number of man-hours worked about three billions, was nine per cent less than in the year preceding. These figures are given side by side with a similar comparison of the totals of 1922 and 1923; twelve months in each year. The year 1923 showed large increases over 1922. The circular explains that the difference between these two records is due primarily to changes in the volume of railroad traffic; and the effect of increases and decreases in the train movement is intensified by the necessity of employing inexperienced men when business increases suddenly; also, the falling off in traffic not only is followed by the employment of fewer men but also by the employment of better men, on the average, the least desirable men being dismissed.

Referring to the common practice of curtailing safety work when business is dull, the committee on statistics calls upon railroads to consider:

1. The cost of carrying on safety work in a thorough manner.
2. The cost of injuries to persons.
3. The possible savings that may be effected by intensive safety work.
4. The good effect that freedom from accidents has upon employees.
5. The necessity from a policy standpoint of a minimum accident frequency ratio.

The circular also makes favorable mention of the fact that a number of railroads have reduced the frequency of injuries to workmen by promulgating records making comparisons of the efficiency of different foremen in a shop [See article on another page, "To Reduce Preventable Accidents."—EDITOR.]

Freight Operating Statistics of Large Steam Roads—Selected Items for Month of October,

Region, road and year	Average miles of road operated	Train-miles	Locomotive-miles		Car-miles		Ton-miles (thousands)		Average number of locomotives on line daily			
			Principal and helper	Light	Loaded (thousands)	Per cent loaded	Gross. Excluding locomotive and tender	Net. Revenue and non-revenue	Serv-ice-able	Un-serv-iceable	Per cent unserv-iceable	Stored
New England Region:												
Boston & Albany.....1924	394	273,399	291,433	29,919	5,388	68.6	282,507	111,145	124	21	14.3	...
.....1923	394	292,339	313,374	35,083	5,961	70.4	305,085	125,927	114	32	22.0	...
Boston & Maine.....1924	2,455	544,657	627,146	65,376	13,893	71.6	694,916	287,802	336	123	26.8	38
.....1923	2,455	625,138	694,659	62,793	14,527	72.5	735,674	310,083	346	126	26.6	16
N. Y., New H. & Hartf.....1924	1,953	487,519	516,117	31,571	13,441	72.2	672,190	287,254	312	60	16.1	39
.....1923	1,974	536,207	564,017	40,161	13,451	72.2	676,923	297,901	304	80	20.9	7
Great Lakes Region:												
Delaware & Hudson.....1924	888	378,094	502,970	46,384	10,438	68.3	650,557	335,596	253	36	12.3	79
.....1923	886	403,896	553,520	49,208	11,203	68.2	712,255	375,175	248	53	17.7	31
Del., Lack. & Western.....1924	993	633,188	739,316	106,943	19,887	68.6	1,127,321	563,879	303	62	17.0	29
.....1923	993	635,317	766,887	119,013	19,981	68.0	1,115,456	501,474	280	67	19.4	2
Erie (inc. Chic. & Erie).....1924	2,325	1,105,964	1,232,515	126,420	42,486	67.2	2,515,278	1,122,143	665	93	12.2	131
.....1923	2,309	1,147,991	1,286,834	93,237	42,551	68.3	2,481,659	1,116,629	687	137	16.6	96
Lehigh Valley.....1924	1,357	659,132	726,356	94,811	20,756	66.0	1,240,280	575,427	471	74	13.5	109
.....1923	1,317	705,177	781,356	97,517	20,572	67.9	1,240,863	608,595	420	106	20.2	32
Michigan Central.....1924	1,827	585,481	595,457	22,992	19,243	66.1	1,045,670	411,658	311	61	16.5	88
.....1923	1,827	612,552	627,011	26,051	19,720	68.0	1,031,767	421,378	339	51	13.2	51
New York Central.....1924	6,447	2,187,958	2,474,221	177,404	81,508	65.0	4,834,831	2,155,595	1,248	388	23.7	347
.....1923	6,469	2,348,678	2,663,677	199,198	86,142	65.7	5,074,450	2,266,964	1,375	392	22.2	328
New York, Chic. & St. L.....1924	1,669	684,615	697,472	6,799	21,856	69.6	1,168,698	477,864	246	63	20.4	45
.....1923	1,669	778,024	791,870	3,248	21,809	70.0	1,150,079	474,391	216	68	24.0	4
Pere Marquette.....1924	2,227	419,750	433,992	10,383	11,327	71.3	596,865	281,333	197	21	9.4	32
.....1923	2,197	464,322	491,756	10,529	11,688	73.0	622,035	318,841	192	26	11.9	7
Pitta. & Lake Erie.....1924	231	130,996	135,909	1,300	4,429	63.2	344,726	203,925	70	19	21.0	10
.....1923	231	156,712	160,185	1,087	5,888	65.2	436,325	261,033	73	16	17.5	11
Wabash.....1924	2,460	708,824	746,639	12,636	22,798	73.4	1,212,639	527,379	301	56	15.6	29
.....1923	2,418	732,572	770,498	17,641	21,419	72.8	1,118,266	472,231	284	55	16.2	...
Central Eastern Region:												
Baltimore & Ohio.....1924	5,207	2,011,375	2,315,513	179,419	58,318	64.4	3,649,657	1,773,231	987	306	23.7	96
.....1923	5,212	2,171,044	2,493,412	208,201	61,230	65.9	3,750,313	1,850,128	1,111	169	13.2	77
Central of New Jersey.....1924	692	296,741	325,455	38,175	7,702	61.9	494,627	238,815	234	42	15.2	43
.....1923	694	298,479	328,524	41,624	7,591	63.9	476,463	235,721	230	49	17.5	29
Chicago & Eastern Ill.....1924	945	253,810	255,656	4,285	7,169	64.8	429,391	210,770	127	32	20.1	38
.....1923	945	253,195	256,300	4,287	7,113	65.6	420,148	208,717	130	46	26.1	34
Clev., Cin., Chic. & St. L.....1924	2,387	775,394	829,165	15,873	25,051	62.8	1,612,290	787,594	339	96	22.0	38
.....1923	2,377	773,508	809,727	9,075	24,499	64.2	1,542,898	754,006	357	85	19.3	35
Elgin, Joliet & Eastern.....1924	460	111,710	119,961	4,673	3,526	66.0	262,210	141,390	79	19	19.3	16
.....1923	460	133,026	146,830	7,767	4,063	66.5	307,626	166,797	86	15	14.8	1
Long Island.....1924	393	49,263	51,277	8,200	716	60.0	43,649	17,505	43	15	26.3	5
.....1923	393	48,867	58,384	9,498	675	61.8	39,543	15,989	39	14	26.4	...
Pennsylvania System.....1924	10,942	4,754,267	5,140,411	381,227	138,760	65.3	9,022,896	4,389,566	2,689	822	23.4	201
.....1923	10,907	5,134,814	5,177,010	141,790	157,796	66.4	9,249,635	4,638,163	2,948	533	15.3	135
Reading.....1924	1,141	662,413	731,193	74,756	17,213	64.4	1,147,638	598,656	417	80	16.1	115
.....1923	1,142	682,122	754,776	78,808	17,736	67.2	1,136,076	604,075	324	111	25.5	39
Pocahontas Region:												
Chesapeake & Ohio.....1924	2,555	1,144,390	1,226,968	39,145	36,239	57.0	2,837,475	1,551,552	462	102	18.1	6
.....1923	2,553	1,015,544	1,119,884	24,596	30,656	58.5	2,371,404	1,287,835	435	105	19.5	15
Norfolk & Western.....1924	2,230	936,705	1,115,924	35,744	28,805	60.7	2,317,164	1,247,412	578	99	14.7	143
.....1923	2,228	921,723	1,151,788	34,029	27,178	60.4	2,105,234	1,128,646	561	125	18.2	61
Southern Region:												
Atlantic Coast Line.....1924	4,865	684,947	698,894	12,282	17,529	68.1	907,941	386,009	401	51	11.3	71
.....1923	4,861	705,469	710,918	10,599	17,747	68.4	900,704	373,132	363	59	14.1	62
Central of Georgia.....1924	1,907	332,327	334,012	5,923	7,456	74.8	386,145	179,618	135	17	11.1	10
.....1923	1,907	299,530	303,227	5,364	6,472	75.7	324,282	148,304	128	18	12.5	5
I. C. (inc. Y. & M. V.).....1924	6,198	1,851,438	1,872,555	41,157	56,751	67.6	3,401,814	1,546,544	765	117	13.2	35
.....1923	6,190	1,992,551	2,014,015	42,491	56,158	64.0	3,469,403	1,557,191	741	123	14.2	...
Louisville & Nashville.....1924	5,026	1,822,001	1,041,321	68,025	35,836	62.4	2,382,204	1,173,022	624	102	14.0	24
.....1923	5,032	1,829,904	1,939,891	70,632	33,713	61.7	2,190,536	1,057,682	622	84	11.9	...
Seaboard Air Line.....1924	3,547	480,492	499,727	9,412	11,848	70.6	614,988	259,050	213	39	15.6	6
.....1923	3,553	509,415	522,554	9,507	11,984	72.0	611,913	259,449	207	40	16.1	1
Southern Ry.....1924	6,840	1,470,554	1,506,117	34,129	35,489	71.9	1,850,169	782,701	880	109	11.0	38
.....1923	6,942	1,559,296	1,605,146	36,206	36,669	72.6	1,874,531	832,370	792	135	14.6	...
Northwestern Region:												
Chic. & North Western.....1924	8,463	1,811,634	1,876,457	38,063	44,829	65.0	2,583,356	1,097,789	774	254	24.7	70
.....1923	8,463	1,853,573	1,950,107	28,138	44,265	65.3	2,522,640	1,057,679	893	177	16.5	34
Chic., Milw. & St. Paul.....1924	10,983	1,856,287	1,954,007	84,502	53,893	65.8	3,124,824	1,422,058	961	162	14.4	86
.....1923	11,002	1,950,905	2,017,722	74,571	52,159	66.7	2,900,775	1,303,569	948	165	14.9	81
Chic., St. P., Minn. & Om.....1924	1,726	374,163	401,927	16,908	8,277	75.7	439,678	200,545	167	38	18.7	3
.....1923	1,726	374,163	401,927	16,908	8,277	75.7	439,678	200,545	167	38	18.7	3
Great Northern.....1924	8,251	1,370,041	1,405,776	29,298	44,869	64.3	2,773,729	1,311,612	649	121	15.7	38
.....1923	8,251	1,499,874	1,552,912	71,822	45,144	64.8	2,736,597	1,246,100	646	105	14.4	28
M., St. P. & S. Ste. M.....1924	4,374	741,774	755,669	7,875	18,609	66.3	1,041,271	495,844	305	38	11.1	1
.....1923	4,374	636,926	648,948	12,240	15,494	72.2	805,626	387,689	294	50	14.4	3
Northern Pacific.....1924	6,447	1,130,735	1,180,027	59,008	34,022	64.4	2,053,664	927,286	581	149	20.4	64
.....1923	6,415	1,151,375	1,204,675	67,987	34,031	64.6	2,005,560	860,070	600	135	18.4	31
Oreg.-Wash. R. R. & Nav.....1924	2,185	239,299	258,382	25,707	6,755	69.6	391,891	179,558	148	27	15.5	15
.....1923	2,180	283,558	305,572	34,266	7,314	68.0	431,450	197,035	155	22	12.4	4
Central Western Region:												
Atch., Top. & S. Fe (inc. 1924	9,979	2,094,435	2,264,100	134,994	63,594	63.0	3,735,931	1,262,054	815	154	15.9	37

1924, Compared with October, 1923, for Roads with Operating Revenues above \$25,000,000

Region, road and year	Average number of freight cars on line daily					Gross tons per train, excluding locomotive and tender	Net tons per train	Net tons per loaded car	Net ton-miles per car-day	Car miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles including locomotive and tender	Locomotive miles per locomotive day
	Home	Foreign	Total	Per cent un-service-able	Stored								
New England Region:													
Boston & Albany.....1924	2,197	5,733	7,930	2.9	...	1,033	406	20.6	452	31.9	9,101	188	71.6
1923	1,906	6,982	8,888	3.3	...	1,044	431	21.1	457	30.7	10,312	197	77.1
Boston & Maine.....1924	13,219	17,360	30,579	10.5	...	1,276	528	20.7	304	20.5	3,782	135	48.7
1923	13,330	19,476	32,806	11.1	...	1,177	496	21.3	305	19.7	4,074	154	51.8
N. Y., New H. & Hartf.....1924	19,394	19,646	39,040	20.9	340	1,379	589	21.4	237	15.4	4,744	140	47.5
1923	19,184	19,578	38,762	19.6	...	1,262	556	22.1	248	15.5	4,868	162	50.7
Great Lakes Region:													
Delaware & Hudson.....1924	8,770	6,365	15,135	7.6	...	1,721	888	32.2	715	32.6	12,191	176	61.3
1923	8,776	7,891	16,667	5.1	...	1,763	929	33.5	726	31.8	13,654	195	64.6
Del., Lack. & Western.....1924	15,094	10,927	26,021	3.6	10	1,780	796	25.3	625	35.9	16,376	159	74.9
1923	13,070	12,653	25,723	3.9	...	1,756	789	25.1	629	36.8	16,290	178	82.4
Erie (inc. Chic. & Erie).....1924	32,169	23,984	56,153	6.1	4,627	2,274	1,015	26.4	645	36.3	15,571	125	57.8
1923	22,948	27,307	50,255	7.4	...	2,162	973	26.2	717	40.0	15,597	132	54.1
Lehigh Valley.....1924	20,664	11,746	32,410	6.8	...	1,882	873	27.7	573	31.3	13,683	147	48.6
1923	19,952	13,682	33,634	4.8	...	1,760	863	29.6	584	29.1	14,908	167	53.9
Michigan Central.....1924	11,402	17,894	29,296	5.3	36	1,786	703	21.4	433	32.0	7,270	118	53.7
1923	9,332	20,345	29,677	4.3	...	1,684	688	21.4	458	31.5	7,442	131	54.0
New York Central.....1924	59,664	69,529	129,193	4.3	6,869	2,210	985	26.4	538	31.3	10,786	119	52.3
1923	49,022	91,183	140,205	6.0	...	2,161	965	26.3	522	30.2	11,305	124	52.3
New York, Chic. & St. L.....1924	7,732	12,866	20,598	6.1	...	1,707	698	21.9	748	49.2	9,238	114	73.4
1923	7,645	13,932	21,577	7.1	...	1,478	610	21.8	709	46.5	9,166	138	90.2
Pere Marquette.....1924	7,851	12,528	20,379	6.9	...	1,427	670	24.8	445	25.1	4,075	122	65.8
1923	6,664	17,183	23,847	3.3	...	1,340	687	27.3	431	21.7	4,681	143	74.2
Pitts. & Lake Erie.....1924	12,879	8,237	21,116	4.3	1,505	2,632	1,557	46.0	312	10.7	28,421	72	50.3
1923	7,622	12,614	20,236	3.7	...	2,784	1,666	44.3	416	14.4	36,419	75	58.6
Wabash.....1924	10,928	11,927	22,855	3.3	400	1,711	744	23.1	744	43.9	6,916	130	68.5
1923	9,154	14,575	23,729	2.1	...	1,526	645	22.0	642	40.0	6,300	152	75.2
Central Eastern Region:													
Baltimore & Ohio.....1924	67,695	43,361	111,056	15.2	732	1,815	882	30.4	515	26.3	10,986	166	62.2
1923	55,037	48,636	103,673	4.6	...	1,727	852	30.2	576	28.9	11,451	186	68.1
Central of New Jersey.....1924	16,539	11,275	27,814	4.4	2,298	1,667	805	31.6	277	14.4	11,133	177	42.5
1923	13,138	12,946	26,084	9.8	...	1,596	790	31.1	262	14.7	10,951	177	42.8
Chicago & Eastern Ill.....1924	13,061	5,054	18,115	20.8	863	1,692	830	29.4	374	19.6	7,194	144	52.7
1923	11,550	5,450	17,000	15.8	...	1,639	824	29.3	395	20.4	7,124	176	48.0
Clev., Cin., Chic. & St. L.....1924	11,912	23,496	35,408	5.4	1,081	2,072	1,016	31.4	718	36.3	10,645	118	62.7
1923	11,237	24,483	35,720	6.5	...	1,993	975	30.8	681	34.4	10,234	126	59.7
Elgin, Joliet & Eastern.....1924	5,774	6,701	16,475	8.2	982	2,347	1,266	46.1	277	10.5	9,926	126	41.0
1923	9,136	7,558	16,694	6.7	...	2,313	1,254	41.1	322	11.8	11,704	118	49.3
Long Island.....1924	1,707	5,401	7,108	1.3	78	886	355	24.4	79	5.4	1,436	253	33.0
1923	1,295	5,976	7,271	1.3	...	809	327	23.7	71	4.8	1,311	311	41.5
Pennsylvania System.....1924	195,520	102,797	298,317	10.1	12,086	1,898	923	31.6	475	23.0	12,941	134	50.7
1923	169,456	118,491	287,947	4.4	3,880	1,801	903	32.7	520	23.9	13,718	150	55.5
Reading.....1924	21,868	15,714	37,582	2.4	3,562	1,733	904	34.8	514	22.9	16,931	164	52.4
1923	15,335	19,416	34,751	3.4	...	1,666	886	34.1	561	24.5	17,069	179	61.8
Pocahontas Region:													
Chesapeake & Ohio.....1924	24,914	14,326	39,240	5.9	699	2,480	1,356	42.8	1,256	51.5	19,589	110	72.4
1923	25,692	14,700	40,392	4.3	...	2,335	1,268	42.0	1,028	41.9	16,273	128	68.3
Norfolk & Western.....1924	26,861	10,946	37,809	4.6	1,416	2,473	1,332	43.3	1,064	40.4	18,044	156	54.8
1923	24,565	12,781	37,346	4.4	...	2,284	1,224	41.5	575	38.8	16,339	187	55.7
Southern Region:													
Atlantic Coast Line.....1924	19,485	11,005	30,490	4.7	...	1,356	564	22.0	400	26.7	2,560	126	50.7
1923	13,895	14,565	28,460	4.3	...	1,277	529	21.0	423	29.4	2,476	128	55.1
Central of Georgia.....1924	4,063	4,887	8,950	6.9	...	1,162	541	24.1	647	35.9	3,039	153	72.0
1923	2,331	5,512	7,843	4.9	...	1,083	495	22.9	610	35.2	2,509	157	68.2
I. C. (inc. Y. & M. V.).....1924	38,532	27,603	66,135	4.6	...	1,837	835	27.3	754	40.9	8,049	127	70.1
1923	34,486	34,766	69,252	5.3	1,893	1,741	782	27.7	725	40.9	8,115	141	76.8
Louisville & Nashville.....1924	39,243	20,319	59,562	14.2	103	1,307	644	32.7	635	31.1	7,529	137	89.4
1923	32,477	23,013	55,490	8.1	60	1,197	578	31.4	615	31.7	6,780	181	91.9
Seaboard Air Line.....1924	9,607	8,004	17,611	5.4	...	1,280	539	21.9	475	30.6	2,356	149	65.2
1923	8,246	11,005	19,251	15.4	...	1,201	509	21.6	435	27.9	2,356	159	69.5
Southern Ry.....1924	37,260	22,945	60,205	5.1	...	1,258	532	22.1	419	26.4	3,691	171	59.2
1923	28,551	30,596	59,147	3.4	...	1,202	534	22.7	454	27.6	3,868	188	57.1
Northwestern Region:													
Chic. & North Western.....1924	45,635	36,730	82,365	10.2	...	1,426	606	24.5	429	27.0	4,184	140	60.1
1923	42,552	36,306	78,858	7.5	...	1,361	571	23.9	433	27.7	4,032	151	59.6
Chic., Milw. & St. Paul.....1924	52,800	32,438	85,238	7.5	...	1,683	766	26.4	538	31.0	4,177	142	58.6
1923	49,401	32,377	81,778	7.0	...	1,487	668	25.0	514	30.9	3,822	153	60.6
Chic., St. P., Minn. & Om.....1924	3,564	10,967	14,531	9.2	1,195	1,109	506	24.2	445	24.1	3,748	145	69.3
1923	3,502	9,804	13,306	8.9	1,088	1,066	449	22.0	407	26.0	3,137	161	64.8
Great Northern.....1924	47,931	22,707	70,638	4.6	...	2,025	957	29.2	595	31.6	5,128	127	61.4
1923	46,719	15,973	62,692	7.0	...	1,825	831	27.6	641	35.8	4,872	133	69.8
M., St. P. & S. Ste. M.....1924	20,636	8,787	29,423	4.7	1,115	1,404	668	26.6	544	30.8	3,657	107	71.8
1923	18,870	8,295	27,169	6.3	1,616	1,265	609	25.0	460	25.5	2,859	119	62.2
Northern Pacific.....1924	34,270	14,628	48,898	5.4	...	1,816	820	27.3	611	34.7	4,640	118	54.8
1923	31,272	14,857	46,129	6.7	...	1,742	747	25.3	601	36.8	4,325	123	55.9
Oreg.-Wash. R. R. & Nav.....1924	5,569	4,788	10,357	3.4	...	1,638	750	26.6	559				

Ask Extension of Time for Train Control

Petitions for a postponement of the effective date of the Interstate Commerce Commission's order of June 13, 1922, as modified by its order of July 18, 1924, requiring installations of automatic train control, have been filed with the commission by the Lehigh Valley, the Cincinnati, New Orleans & Texas Pacific and the Southern.

In the petition of the C. N. O. & T. P., and the Southern, it is

tives and a report made, the petitioners hesitate to go forward on a major scale with the work of equipping the remaining mileage required by the order. Therefore, further time is asked in which to comply with the mandate of the order, and it is stated that if the present installation is approved the roads will proceed as rapidly as possible to equip the remaining mileage as required by the order.

The Lehigh Valley petition asks for a postponement of the

OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM ROADS IN THE UNITED STATES										
(FOR 194 STEAM ROADS, INCLUDING 16 SWITCHING AND TERMINAL COMPANIES)										
FOR THE MONTH OF OCTOBER, 1924, AND 1923										
Item	United States		Eastern District		Pocahontas Region		Southern Region		Western District	
	1924	1923	1924	1923	1924	1923	1924	1923	1924	1923
Average number of miles operated.....	236,172.72	235,933.76	59,518.36	59,365.11	5,458.97	5,449.50	38,354.73	38,449.27	132,841.56	132,669.88
Revenues:										
Freight	\$438,812,627	\$441,518,013	\$181,938,739	\$192,891,162	\$19,132,399	\$17,417,032	\$53,292,062	\$53,808,979	\$184,449,427	\$177,400,840
Passenger	82,861,251	893,795,104	40,827,418	44,302,648	1,886,507	2,163,547	11,001,888	12,142,809	29,145,438	35,186,100
Mail	6,155,489	7,737,268	3,108,658	2,860,988	194,378	194,302	1,163,131	1,079,432	3,693,322	3,602,546
Express	13,583,372	14,255,826	5,905,711	6,300,677	297,254	311,041	1,653,819	1,654,038	5,726,088	5,980,070
All other transportation	17,567,287	18,116,954	9,844,344	10,162,939	186,831	175,000	1,299,105	1,325,500	6,237,067	6,453,515
Incidental	10,928,496	11,896,109	5,456,520	6,169,924	340,158	377,794	1,090,481	1,017,113	4,041,337	4,331,278
Joint facility—Cr.	904,014	819,569	400,922	402,348	15,688	14,500	131,795	57,079	355,609	345,642
Joint facility—Dr.	216,272	224,693	105,167	118,480	2,113	3,634	33,817	34,622	75,175	67,957
Ky. operating revs.	572,600,264	587,914,150	247,377,145	262,972,206	22,051,602	20,649,582	69,598,464	71,060,328	233,573,053	233,232,034
Expenses:										
Maintenance of way and structures	75,376,482	81,638,412	31,140,728	36,483,444	3,120,560	3,150,072	10,730,356	10,832,864	30,384,838	31,172,032
Maint. of equipment	113,129,283	133,706,111	53,682,101	68,922,666	5,637,073	5,611,327	14,358,402	15,794,229	39,451,707	43,377,889
Traffic	8,193,745	8,103,841	3,140,190	3,106,851	217,609	192,564	1,367,200	1,414,550	3,468,746	3,389,876
Transportation	189,378,343	204,386,676	88,203,660	96,271,394	6,137,668	6,594,749	22,907,284	25,167,389	72,129,731	76,353,144
Miscel. operations	4,351,965	4,416,248	2,086,920	2,089,088	79,653	83,952	389,158	360,982	1,796,234	1,882,226
General	14,294,564	14,157,717	6,238,571	6,355,144	459,436	426,383	1,874,972	1,863,013	5,721,585	5,513,177
Transportation for investment—Cr.	1,060,498	1,068,435	113,766	174,414	42,736	20,838	207,155	145,101	696,841	728,082
Ky. operating expens.	403,663,884	445,340,570	184,378,404	213,054,173	15,609,263	16,038,209	51,420,217	55,287,926	152,256,000	160,960,262
Net revenue from railway operations	168,936,380	142,573,580	62,998,741	49,918,033	6,442,339	4,611,375	18,178,247	15,772,402	81,317,053	72,271,772
Railway tax accruals	32,321,960	29,795,931	12,681,330	11,930,482	1,116,698	1,243,945	4,371,742	3,714,835	14,152,190	12,906,669
Uncollectible railway revenues	223,995	147,074	84,559	67,853	5,156	4,691	18,170	18,818	116,110	55,712
Ky. operating income	136,390,425	112,630,575	50,232,852	37,919,698	5,320,485	3,362,737	13,788,335	12,038,749	67,048,753	59,309,391
Equipment rents—Dr. balance	7,344,565	7,058,683	2,961,075	2,919,487	d 349,297	d 437,399	d 136,142	155,106	4,869,029	4,421,489
Joint facility rent—Dr. balance	1,940,671	1,796,265	1,100,064	950,322	106,031	101,410	125,553	90,399	609,023	654,134
Net railway operating income	127,105,089	103,775,627	46,171,713	34,049,889	5,563,751	3,698,726	13,798,924	11,793,244	61,570,701	54,233,768
Ratio of expenses to revenues (per cent) ..	70.50	75.75	74.53	81.02	70.79	77.67	73.88	77.80	65.19	69.01
FOR TEN MONTHS ENDED WITH OCTOBER, 1924 AND 1923										
Average number of miles operated.....	256,049.85	235,830.53	59,507.32	59,329.37	5,459.20	5,448.89	38,355.49	38,443.54	132,727.84	132,608.73
Revenues:										
Freight	3,604,673,524	3,885,506,648	1,596,237,612	1,818,567,176	161,904,013	160,088,398	479,751,711	495,815,277	1,366,780,188	1,411,035,797
Passenger	906,957,794	959,332,762	443,372,947	461,163,484	20,769,449	22,516,741	122,670,026	129,115,674	346,536,863	346,536,863
Mail	79,812,092	75,658,825	30,509,034	27,957,141	1,968,651	1,811,321	11,314,515	10,839,778	36,019,892	35,050,585
Express	116,767,484	126,609,873	51,237,772	58,141,031	2,648,364	2,878,823	15,677,645	15,888,149	47,203,703	49,701,870
All other transportation	160,781,639	167,732,577	92,344,937	98,720,747	1,856,828	1,840,977	9,400,481	9,627,197	57,179,393	57,543,656
Incidental	99,675,083	112,592,783	50,566,100	60,501,369	3,395,742	3,610,585	10,613,075	10,861,414	35,101,166	37,619,415
Joint facility—Cr.	8,644,408	8,355,827	3,613,227	3,831,188	151,139	143,627	1,292,285	1,249,954	3,586,757	3,131,058
Joint facility—Dr.	2,140,350	2,223,663	1,057,028	1,162,068	23,657	34,028	308,852	324,717	750,813	702,850
Ky. operating revs.	4,975,172,674	5,333,565,632	2,266,824,601	2,527,720,068	192,670,529	192,856,444	650,411,886	673,072,726	1,865,265,658	1,939,916,394
Expenses:										
Maintenance of way and structures	676,987,555	691,454,576	277,739,365	295,188,222	28,229,248	24,252,829	93,433,791	95,172,930	277,585,151	276,840,595
Maint. of equipment	1,061,216,279	1,239,606,268	565,799,099	621,723,467	48,429,566	50,393,008	133,464,444	147,188,363	373,523,170	420,301,430
Traffic	82,019,170	77,637,524	30,944,401	28,970,819	2,083,591	1,831,192	14,215,126	13,899,752	34,775,652	32,885,761
Transportation	1,810,294,043	1,972,122,572	860,048,692	958,660,070	59,095,726	63,210,114	232,596,960	247,503,332	658,152,665	702,749,056
Miscel. operations	42,218,280	42,616,282	20,042,985	20,564,544	838,164	829,842	4,061,555	3,868,516	17,275,576	17,353,880
General	140,807,677	135,269,518	62,103,611	60,457,862	4,459,370	4,059,708	18,253,872	17,692,207	55,990,824	53,059,741
Transportation for investment—Cr.	10,914,437	8,691,957	1,501,538	1,117,331	357,565	194,037	1,419,074	1,016,012	7,636,260	6,354,577
Ky. operating expens.	3,802,628,567	4,150,024,783	1,755,176,615	1,984,447,653	142,718,500	144,432,656	495,006,674	524,309,088	1,409,666,778	1,496,835,386
Net revenue from railway operations	1,172,544,107	1,183,540,849	511,647,966	543,272,415	49,892,029	48,423,788	155,405,212	148,763,638	455,598,880	443,081,008
Railway tax accruals	286,939,812	278,106,379	117,803,751	117,723,553	11,734,291	10,250,646	36,015,569	33,827,546	121,386,201	116,304,634
Uncollectible railway revenues	1,746,890	1,325,606	787,975	601,411	40,102	81,583	166,694	132,539	752,719	530,073
Ky. operating income	883,837,405	904,108,864	393,056,260	424,947,451	38,117,636	38,111,559	119,223,349	114,803,553	333,459,960	326,246,301
Equipment rents—Dr. balance	60,953,375	59,121,894	36,337,574	37,135,900	d 3,309,627	d 4,238,672	2,999,825	6,084,367	24,926,103	20,140,299
Joint facility rent—Dr. balance	17,328,451	18,370,800	9,247,972	9,813,799	996,294	1,104,921	1,062,322	876,171	6,521,863	6,575,909
Net railway operating income	805,075,079	826,616,170	347,470,714	377,997,752	40,430,969	41,245,310	115,161,462	107,843,015	302,011,994	299,530,093
Ratio of expenses to revenue (per cent) ..	76.43	77.81	77.43	78.51	74.11	74.89	76.11	77.90	75.57	77.16

a Includes \$3,288,685 sleeping and parlor car surcharge.

b Includes \$3,644,050 sleeping and parlor car surcharge.

c Includes \$31,202,818 sleeping and parlor car surcharge.

d Deficit or other reverse items.

e Includes \$31,279,119 sleeping and parlor car surcharge.

Compiled by the Bureau of Statistics, Interstate Commerce Commission, subject to revision.

stated that 35.5 miles between Ludlow and Williamstown, Ky., have been equipped with the auto-manual type of inductive train control and that the equipment is now ready for inspection by the commission, and that this has been asked for; and that, until this installation and its performance under actual operating conditions have been inspected and observed by the commission's representa-

effective date for six months. It says that a contract has been made with the General Railway Signal Company for the installation of the auto-manual system between Easton, Pa., and Newark, N. J., and that the full roadside equipment has been installed between Phillipsburg and Flemington Junction, N. J., over 20

(Continued on page 1141)

October and Ten Months of Calendar Year 1924

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1924										
Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Net after rents, 1923.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Equip. ment.	Traffic.				Trans- portation.	General.	Total.
Albany and Youngstown.....	170	\$262,594	\$478	\$274,370	\$32,595	\$26,113	\$9,306	\$75,335	\$10,814	\$154,163
Akron, Canton & Youngstown.....	170	2,235,198	6,752	2,241,950	308,448	232,035	95,682	100,920	99,724	1,376,242
Albany and Youngstown.....	10 mos.	61,309	61,309	122,618	73,077	61,241	8,695	100,920	13,406	259,455
Albama & Vicksburg.....	141	263,729	61,619	325,348	514,806	597,062	95,379	984,838	137,467	2,349,305
Albama & Vicksburg.....	10 mos.	1,251,473	629,619	1,881,092	514,806	597,062	95,379	984,838	137,467	2,349,305
Vicksburg, Shreveport & Pacific.....	188	285,183	72,970	358,153	87,561	57,928	12,387	134,353	15,963	310,794
Vicksburg, Shreveport & Pacific.....	10 mos.	2,424,523	853,078	3,277,601	654,719	564,826	119,588	1,248,035	151,789	2,760,041
Vicksburg, Shreveport & Pacific.....	10 mos.	3,466,416	28,050	3,494,466	75,436	95,826	9,267	183,969	15,315	380,027
Ann Arbor.....	293	3,986,537	375,560	4,362,097	600,850	864,945	93,612	1,862,772	142,747	3,505,140
Ann Arbor.....	10 mos.	15,596,251	3,061,147	18,657,398	2,918,447	3,796,062	329,734	5,274,801	341,134	12,608,032
Atchison, Topeka & Santa Fe.....	10 mos.	110,402,325	36,133,122	146,535,447	25,707,618	37,440,303	3,065,283	50,338,016	3,491,153	118,926,209
Atchison, Topeka & Santa Fe.....	10 mos.	3,001,503	366,264	3,367,767	469,904	530,301	48,956	820,534	71,129	1,395,230
Gulf, Colorado & Santa Fe.....	1,908	18,710,797	3,384,914	22,095,711	4,710,599	5,224,747	438,945	7,056,206	636,821	18,061,795
Gulf, Colorado & Santa Fe.....	10 mos.	1,052,156	137,563	1,189,719	135,984	240,975	8,547	312,879	18,662	716,739
Panhandle & Santa Fe.....	10 mos.	7,111,380	1,240,090	8,351,470	1,425,734	2,162,109	78,574	2,539,543	184,357	6,386,492
Panhandle & Santa Fe.....	10 mos.	155,879	25,670	181,549	34,152	32,918	9,701	90,695	10,665	182,831
Atlanta & West Point.....	10 mos.	1,366,415	722,601	2,089,016	258,362	434,077	88,277	884,184	109,468	1,893,440
Western of Alabama.....	10 mos.	182,213	64,759	246,972	32,871	41,738	9,998	80,334	10,680	179,663
Western of Alabama.....	10 mos.	1,637,212	681,261	2,318,473	286,364	328,265	97,267	784,015	109,156	1,863,173
Atlanta, Birmingham & Atlantic.....	10 mos.	336,035	43,830	379,865	413,533	79,555	92,221	135,814	17,187	372,009
Atlantic Coast Line.....	10 mos.	3,202,979	466,634	3,669,613	3,973,102	738,337	227,495	1,648,107	162,885	3,642,456
Atlantic Coast Line.....	10 mos.	4,219,847	1,167,907	5,387,754	996,608	1,509,252	118,082	2,442,062	158,130	5,050,546
Charleston & Western Carolina.....	10 mos.	46,781,883	14,785,134	61,567,017	8,905,171	13,987,171	1,239,982	24,012,350	1,527,331	50,015,161
Charleston & Western Carolina.....	10 mos.	795,265	29,421	824,686	35,741	53,459	130,107	7,319	7,319	232,385
Baltimore & Ohio.....	10 mos.	150,225,777	24,636,054	174,861,831	22,566,456	40,089,651	3,581,773	70,909,558	5,185,295	143,752,229
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335	240,340	1,877,675	335,760	566,755	1,782	182,569	26,484	321,220
Baltimore & Ohio.....	10 mos.	1,637,335								

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net after taxes	Net after 1923
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Traffic	Transportation					
Chicago, Indianapolis & Louisville... Oct.	654	\$1,156,859	\$254,293	\$1,411,152	\$141,776	\$34,276	\$525,105	69.40	\$475,424	\$380,868	\$269,463	\$271,702
Chicago, Indianapolis & Louisville... 10 mos.	654	10,310,783	2,554,129	12,864,912	1,247,708	334,401	5,068,291	72.70	3,891,921	3,104,792	2,681,347	2,722,041
Chicago, Milwaukee & St. Paul... Oct.	10,986	13,340,024	1,575,611	14,915,635	1,994,366	191,204	5,525,409	67.90	5,211,801	4,541,641	3,921,287	3,921,287
Chicago, Milwaukee & St. Paul... 10 mos.	10,986	99,583,083	16,441,071	115,731,316	15,704,063	2,024,798	51,378,223	80.30	25,938,958	18,222,973	14,245,503	13,228,063
Chicago, Peoria & St. Louis R. R. Oct.	247	111,402	9,488	120,890	25,300	1,528	57,797	85.00	20,062	15,192	—6,672	—2,163
Chicago, Peoria & St. Louis R. R. 10 mos.	247	853,841	123,293	977,134	192,009	17,262	551,951	94.50	59,097	20,901	—189,189	—178,381
Chicago River & Indiana... Oct.	19	.....	.....	642,010	91,317	961	228,801	62.70	339,040	195,325	320,468	306,268
Chicago River & Indiana... 10 mos.	19	.....	.....	5,773,392	388,499	8,817	2,273,725	66.30	1,947,696	1,377,026	2,628,232	2,767,314
Chicago, Rock Island & Pacific... Oct.	7,594	9,229,546	1,961,551	11,191,097	1,386,556	187,830	4,121,273	62.90	3,486,097	2,916,020	2,537,717	1,836,262
Chicago, Rock Island & Pacific... 10 mos.	7,614	74,849,177	20,941,350	95,790,527	12,022,543	2,047,947	41,073,279	78.50	22,174,721	16,762,244	12,445,546	10,955,626
Chicago, Rock Island & Gulf... Oct.	461	536,584	73,127	609,711	72,260	1,733	209,347	88.80	270,633	258,143	244,823	111,211
Chicago, Rock Island & Gulf... 10 mos.	461	4,222,554	765,038	4,987,592	687,036	143,418	2,093,461	71.80	1,523,390	1,397,817	1,047,646	427,846
Chicago, St. Paul, Minn. & Omaha... Oct.	1,249	2,281,977	386,898	2,668,875	340,602	29,214	1,073,858	68.90	888,369	693,790	624,083	377,959
Chicago, St. Paul, Minn. & Omaha... 10 mos.	1,249	16,788,301	4,850,741	21,639,042	3,302,091	316,475	9,994,296	80.00	4,687,102	3,316,822	2,739,485	2,227,377
Cincinnati, Indianapolis & Western... Oct.	347	389,765	31,865	421,630	58,641	1,027	168,695	79.20	53,770	73,270	58,409	32,478
Cincinnati, Indianapolis & Western... 10 mos.	347	3,169,962	323,562	3,493,524	520,394	135,993	1,497,625	84.40	580,149	396,691	202,410	270,683
Colorado & Southern... Oct.	1,094	1,046,661	137,792	1,184,453	135,886	12,034	425,035	66.50	423,562	359,867	324,496	187,460
Colorado & Southern... 10 mos.	1,098	8,083,237	1,597,077	9,680,314	1,412,035	238,624	4,010,961	80.40	2,062,007	1,433,164	1,335,974	454,940
Ft. Worth & Denver City... Oct.	456	868,005	224,292	1,092,297	79,287	12,879	278,866	50.70	567,081	500,342	473,444	344,998
Ft. Worth & Denver City... 10 mos.	456	6,376,217	1,738,448	8,114,665	819,362	146,067	2,421,224	63.60	3,134,956	2,696,579	2,717,835	2,107,581
Wichita Valley... Oct.	271	154,757	34,271	189,028	15,414	.....	53,523	39.80	120,395	120,395	78,636	85,637
Wichita Valley... 10 mos.	271	1,124,405	251,977	1,376,382	103,350	215	432,406	51.80	703,989	617,514	426,603	262,552
Columbus & Greenville... Oct.	167	133,867	26,934	160,801	48,743	2,145	61,439	85.60	24,371	22,871	5,121	12,041
Columbus & Greenville... 10 mos.	167	994,946	267,934	1,262,880	394,445	17,819	480,937	87.70	164,045	149,440	33,888	—7,486
Delaware & Hudson... Oct.	894	3,323,245	260,066	3,583,311	396,269	48,286	1,356,300	78.00	2,988,139	2,737,637	2,804,280	624,598
Delaware & Hudson... 10 mos.	894	32,079,379	3,347,792	35,427,171	4,482,102	474,744	13,977,480	81.10	7,104,860	6,067,208	6,440,849	5,559,836
Delaware, Lackawanna & Western... Oct.	992	5,911,931	1,116,499	7,028,430	537,784	114,965	2,969,022	70.10	2,357,304	1,707,444	1,782,019	1,548,178
Delaware, Lackawanna & Western... 10 mos.	992	52,537,460	11,369,727	63,907,187	6,603,962	1,170,802	28,367,195	74.70	18,262,206	12,674,144	13,244,845	10,974,490
Denver & Rio Grande Western... Oct.	2,608	2,903,495	401,281	3,304,776	710,447	50,869	1,163,044	81.60	654,148	498,252	438,856	260,972
Denver & Rio Grande Western... 10 mos.	2,603	20,449,548	4,728,240	25,177,788	7,321,887	512,008	9,010,553	85.70	3,868,314	2,572,299	2,633,244	2,203,978
Denver & Salt Lake... Oct.	255	345,644	22,415	368,059	76,558	948	119,868	77.50	79,001	79,001	69,293	26,707
Denver & Salt Lake... 10 mos.	255	2,110,058	274,879	2,384,937	776,707	12,952	652,626	97.90	54,741	35,268	3,623	1,780
Detroit & Mackinac... Oct.	375	118,910	23,250	142,160	33,303	1,902	62,491	61.50	76,744	66,549	66,589	66,117
Detroit & Mackinac... 10 mos.	375	1,263,651	259,879	1,523,530	304,717	20,447	595,550	64.50	309,233	262,555	267,339	103,294
Detroit & Toledo Shore Line... Oct.	61	3,054,988	.....	3,054,988	26,473	2,798	84,903	43.10	199,368	177,106	98,284	59,856
Detroit & Toledo Shore Line... 10 mos.	61	27,944,442	.....	27,944,442	320,339	28,694	860,803	56.50	1,232,831	1,006,634	254,856	64,958
Detroit Terminal... Oct.	26	.....	.....	199,882	15,209	3	103,977	71.74	56,478	38,191	47,619	61,231
Detroit Terminal... 10 mos.	26	.....	.....	1,957,012	283,829	97	990,183	72.21	543,870	346,731	475,017	461,096
Detroit, Toledo & Ironton... Oct.	469	1,097,490	6,781	1,104,271	198,947	7,705	314,039	62.80	417,211	383,997	272,556	147,227
Detroit, Toledo & Ironton... 10 mos.	468	9,766,383	84,408	9,850,791	1,509,624	72,146	2,817,100	63.30	3,779,624	3,439,976	2,294,300	1,654,677
Duluth & Iron Range... Oct.	275	633,503	6,155	639,658	81,775	854	180,858	55.30	312,807	281,378	281,253	295,828
Duluth & Iron Range... 10 mos.	279	5,109,260	117,913	5,227,173	1,027,270	11,427	1,766,501	74.10	1,479,285	1,380,185	1,380,070	2,011,317
Duluth, Missabe & Northern... Oct.	304	1,560,480	6,585	1,567,065	138,718	2,991	300,382	35.10	1,096,022	680,446	489,386	1,589,345
Duluth, Missabe & Northern... 10 mos.	305	12,488,204	105,115	12,593,319	1,723,235	31,301	2,647,165	48.00	7,029,742	4,579,242	4,523,043	10,166,094
Duluth, South Shore & Atlantic... Oct.	591	402,571	80,285	482,856	93,798	7,136	212,843	76.70	125,487	93,487	64,405	14,224
Duluth, South Shore & Atlantic... 10 mos.	591	3,704,470	945,497	4,650,000	905,714	63,482	2,145,280	80.00	1,021,112	706,009	444,189	489,386
Duluth, Winnipeg & Pacific... Oct.	178	138,843	11,771	150,614	51,536	3,783	64,624	100.30	—578	—578	3,497	29,925
Duluth, Winnipeg & Pacific... 10 mos.	178	1,566,473	182,302	1,748,775	359,150	34,439	735,755	97.80	221,555	129,584	184,007	24,743
Elgin, Joliet & Eastern... Oct.	459	1,766,364	25	1,766,389	143,927	11,651	603,600	59.60	772,521	696,689	569,748	280,161
Elgin, Joliet & Eastern... 10 mos.	459	16,254,731	505	17,844,337	1,880,922	122,268	6,315,260	71.30	5,126,411	4,248,611	2,758,106	5,092,072
El Paso & Southwestern... Oct.	1,139	889,655	147,853	1,037,508	122,656	33,393	259,411	55.80	487,793	376,498	346,013	248,702
El Paso & Southwestern... 10 mos.	1,139	8,206,882	1,646,887	9,853,769	1,713,238	360,933	2,848,177	70.80	3,042,664	2,130,867	1,652,725	1,654,517
Erie R. R. Oct.	2,055	8,271,389	1,004,432	9,275,821	1,109,668	3,713,726	284,548	78.30	2,179,838	1,835,208	1,946,907	1,738,286
Erie R. R. 10 mos.	2,055	70,434,001	11,092,868	81,526,869	10,904,251	1,452,146	34,246,863	83.00	15,025,958	11,544,802	13,119,074	14,530,489
Chicago & Erie ... Oct.	269	1,271,846	58,515	1,330,361	135,849	225,117	40,680,809	62.90	4,389,449	3,866,862	1,008,225	10,201
Chicago & Erie ... 10 mos.	269	10,236,759	650,737	10,887,496	1,291,114	1,521,613	40,680,809	89.10	14,704	11,326	—19,543	—17,915
New Jersey & New York... Oct.	45	25,454	102,952	128,406	24,003	1,371	70,505	82.60	231,711	195,128	—92,334	—103,861
New Jersey & New York... 10 mos.	45	233,482	1,043,112	1,276,594	202,074	12,875	643,961	82.60	231,711	195,128	—92,334	—103,861
N. Y. Susquehanna & Western... Oct.	135	361,084	56,412	417,496	93,361	3,977	204,741	86.00	61,233	43,057	3,664	5,764
N. Y. Susquehanna & Western... 10 mos.	135	2,945,025	597,290	3,542,315	645,694	37,247	2,023,551	91.50	337,536	47,882	—81,710	3,955
Evansville, Ind. & Terre Haute... Oct.	143	187,508	3,945	191,453	39,343	1,955	71,705	72.80	54,196	49,289	30,370	18,792
Evansville, Ind. & Terre Haute... 10 mos.	141	1,411,867	57,568	1,469,435	347,178	18,791	792,589	74.50	390,470	342,165	111,229	—35,835
Florida East Coast... Oct.	763	968,350	375,711	1,344,061	294,152	12,479	323,896	61.10	589,958	484,286	409,652	16,793
Florida East Coast... 10 mos.	763	9,337,041	4,704,504	14,041,545	2,344,220	155,244	5,057,301	65.60	5,539,502	4,528,900	3,644,011	2,841,884
Fort Smith & Western... Oct.	249	192,695	21,682	214,377	28,616	5,395	53,217	55.50	96,864	90,785	76,319	5,084
Fort Smith & Western... 10 mos.	249	1,226,144	196,125	1,422,269	280,911	52,046	494,777	77.80	335,485	275,903	128,242	59,574
Galveston Wharf Co. Oct.	13	.....	.....	267,387	36,564	874	49,540	49.60	134,724	114,724	114,540	56,886
Galveston Wharf Co. 10 mos.	13	.....	.....	1,261,717	440,965	8,860	313,511	72.40	348,787	167,502	167,442	162,798

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
		Freight.	Passenger.	Total (inc. misc.)	Way and structures.	Maintenance of equipment.	Traffic.						Transportation.	General.	Total.
Georgia A. A.	Oct. 328	\$417,919	\$90,733	\$508,652	\$1,536,536	\$106,642	\$22,319	\$222,162	\$20,595	\$415,549	\$131,336	\$138,893
Georgia A. A.	10 mos.	3,674,856	973,958	4,648,814	560,328	976,518	220,960	2,183,194	209,235	4,135,141	852,749	945,056
Georgia & Florida	Oct. 406	129,460	20,717	150,177	21,943	19,979	8,713	54,820	8,279	113,991	35,121	32,648
Georgia & Florida	10 mos.	1,208,958	190,847	1,400,805	183,163	203,833	85,439	551,263	81,894	1,107,083	377,266	187,373
Grand Trunk Western.	Oct. 347	1,288,467	184,595	1,473,062	230,012	366,842	49,081	590,221	51,171	1,294,272	267,118	187,655
Grand Trunk Western.	10 mos.	12,504,953	1,950,823	14,455,776	1,847,423	3,949,200	457,875	5,981,730	499,415	12,818,134	2,543,507	1,779,644
Atlantic & Saint Lawrence.	Oct. 166	117,383	28,483	145,866	52,952	38,259	6,431	52,774	9,193	201,118	-43,205	-235,792
Atlantic & Saint Lawrence.	10 mos.	1,130,959	347,405	1,478,364	570,266	412,976	62,111	1,138,349	92,053	2,291,041	-366,026	-1,654,229
Chic., Det. & Canada Gr. Tr. Co.	Oct. 59	206,456	4,776	211,232	36,404	7,612	6,443	85,946	3,399	139,794	115,317	86,264
Chic., Det. & Canada Gr. Tr. Co.	10 mos.	1,977,339	80,899	2,058,238	294,501	95,192	60,065	831,757	33,458	1,314,932	1,102,530	1,170,483
Det., Grand Haven & Milwaukee.	Oct. 189	518,550	27,466	546,016	606,136	89,514	15,239	257,542	17,253	415,611	190,525	64,748
Det., Grand Haven & Milwaukee.	10 mos.	4,590,238	385,304	4,975,542	936,986	414,908	142,117	2,446,889	153,573	4,116,819	1,328,785	493,133
Great Northern	Oct. 8,250	12,311,230	1,166,595	13,477,825	1,201,916	1,739,081	178,385	3,014,480	216,660	7,076,040	7,076,040	5,294,339
Great Northern	10 mos.	123,176,912	11,299,279	134,476,191	12,178,867	14,627,472	1,739,360	31,886,512	2,167,691	62,921,394	26,483,994	18,569,506
Green Bay & Western.	Oct. 234	124,703	6,821	131,524	28,279	22,421	3,863	44,920	2,399	101,826	38,410	20,225
Green Bay & Western.	10 mos.	1,247,032	68,211	1,315,243	28,279	22,421	3,863	44,920	2,399	101,826	38,410	20,225
Gulf Coast Lines	Oct. 922	882,067	163,852	1,045,919	231,615	159,932	32,459	269,271	35,963	726,880	413,850	363,347
Gulf Coast Lines	10 mos.	9,402,131	1,773,238	11,175,369	1,945,267	2,844,079	297,990	2,935,441	431,569	7,105,318	4,831,566	3,664,030
Gulf & Ship Island.	Oct. 307	255,734	34,080	290,814	826,252	79,247	41,923	85,841	23,533	249,086	77,166	52,862
Gulf & Ship Island.	10 mos.	2,264,898	378,284	2,643,182	548,092	415,002	79,612	842,432	146,088	2,129,802	856,378	598,073
Gulf, Mobile & Northern.	Oct. 465	523,552	35,964	559,516	84,367	92,485	20,307	172,457	21,497	391,113	188,682	139,262
Gulf, Mobile & Northern.	10 mos.	4,417,742	380,683	4,798,425	1,091,421	789,837	213,225	1,551,828	204,724	3,556,050	1,435,371	852,232
Hocking Valley	Oct. 348	1,473,486	66,525	1,540,011	1,699,287	196,344	14,121	498,290	36,641	1,343,977	353,310	215,728
Hocking Valley	10 mos.	12,654,992	755,833	13,410,825	14,954,550	4,508,086	138,997	4,908,794	364,473	11,031,431	3,679,238	2,464,297
Illinois Central	Oct. 4,847	11,068,212	1,903,836	12,972,048	2,234,229	3,356,482	208,993	4,624,695	323,787	10,764,222	3,149,566	1,979,877
Illinois Central	10 mos.	96,065,919	17,084,163	113,150,082	17,000,509	29,914,184	2,008,048	45,849,690	3,162,518	98,243,411	28,012,802	19,213,881
Yazoo & Mississippi Valley.	Oct. 1,380	1,893,341	296,209	2,189,550	6,601,637	484,283	375,458	702,043	44,490	1,630,562	671,075	523,308
Yazoo & Mississippi Valley.	10 mos.	13,796,786	3,022,704	16,819,490	2,925,650	4,345,066	240,785	6,558,474	434,656	13,297,551	4,491,987	1,066,157
Illinois Central Combined Report.	Oct. 6,227	12,961,553	2,200,405	15,161,958	2,735,582	3,731,940	234,231	5,326,738	368,297	12,394,784	3,820,641	2,168,151
Illinois Central Combined Report.	10 mos.	109,862,705	24,106,869	133,969,574	19,926,159	33,045,590	2,448,833	52,408,164	3,597,774	111,540,962	32,523,307	20,280,038
International Great Northern.	Oct. 1,159	1,386,907	208,798	1,595,705	4,753,359	259,619	254,533	34,971	48,624	1,339,671	613,688	453,395
International Great Northern.	10 mos.	10,160,119	2,142,104	12,302,223	2,532,434	2,502,136	350,750	5,022,871	499,537	10,767,731	2,855,007	1,908,031
Kansas City, Mexico & Orient.	Oct. 272	241,696	9,088	250,784	48,361	53,833	6,818	96,370	5,063	210,445	47,369	9,983
Kansas City, Mexico & Orient.	10 mos.	2,118,802	85,879	2,204,681	368,613	416,607	57,121	752,573	57,501	1,653,370	225,091	146,553
Kans. City, Mex. & Orient of Tex. Co.	Oct. 465	218,149	18,893	237,042	748,830	48,226	46,990	7,485	97,306	205,574	43,265	14,724
Kans. City, Mex. & Orient of Tex. Co.	10 mos.	1,791,247	121,334	1,912,581	445,614	348,326	61,622	732,840	60,656	1,667,817	315,587	160,669
Kansas City Southern.	Oct. 767	1,396,281	133,827	1,530,108	235,633	339,321	45,168	516,055	76,841	1,203,539	500,090	341,008
Kansas City Southern.	10 mos.	12,144,024	1,586,949	13,730,973	2,233,056	2,951,459	421,379	5,044,257	759,488	11,402,731	3,752,937	2,720,000
Texasarkana & Ft. Smith.	Oct. 81	214,326	12,759	227,085	683,211	32,054	20,794	5,744	71,393	154,070	99,141	26,233
Texasarkana & Ft. Smith.	10 mos.	2,068,889	139,297	2,208,186	218,245	223,738	51,735	637,163	96,995	1,249,073	1,153,694	743,223
Kansas, Oklahoma & Gulf.	Oct. 314	200,410	9,586	210,000	53,724	52,425	8,212	72,004	9,153	176,608	40,303	27,697
Kansas, Oklahoma & Gulf.	10 mos.	1,614,535	97,043	1,711,578	433,727	290,582	82,372	679,748	107,873	1,394,788	176,456	128,414
Lake Superior & Ishpeming.	Oct. 162	193,139	2,227	195,366	37,393	20,794	5,744	71,393	4,824	125,020	101,545	105,928
Lake Superior & Ishpeming.	10 mos.	1,400,105	43,719	1,443,824	389,423	237,242	5,833	467,940	52,860	1,152,862	471,769	320,333
Lake Terminal R. R.	Oct. 13	.....	.....	.....	97,895	16,476	20,700	.....	1,787	100,495	-2,600	-19,536
Lake Terminal R. R.	12 mos.	.....	.....	.....	993,143	177,220	178,660	.....	18,134	941,166	-38,023	13,938
Lehigh & Hudson River.	Oct. 96	263,526	4,455	267,981	808,551	45,184	45,184	1,653	97,004	70,940	74,937	57,869
Lehigh & Hudson River.	10 mos.	2,521,761	32,629	2,554,390	342,696	437,285	16,861	970,937	102,444	1,870,102	786,111	645,281
Lehigh & New England.	Oct. 219	552,762	1,521	554,283	79,440	107,620	4,872	156,445	17,994	366,371	196,094	54,946
Lehigh & New England.	10 mos.	4,425,445	16,059	4,441,504	596,346	1,119,621	60,612	1,405,552	188,360	3,368,134	1,155,714	972,253
Lehigh Valley	Oct. 1,374	6,118,148	643,088	6,761,236	20,187,202	801,242	2,752,015	123,839	137,618	5,937,309	1,593,403	1,260,968
Lehigh Valley	10 mos.	53,078,096	6,508,341	59,586,437	183,996,545	6,990,667	15,552,015	1,165,222	1,354,315	50,737,732	13,159,213	9,877,133
Los Angeles & Salt Lake.	Oct. 1,209	1,652,859	386,258	2,039,117	502,433	370,268	61,222	719,220	64,043	1,790,550	430,905	302,822
Los Angeles & Salt Lake.	10 mos.	13,007,743	4,802,263	17,810,006	4,106,506	4,106,506	596,157	6,618,282	621,362	16,728,682	3,860,221	2,565,662
Louisiana & Arkansas.	Oct. 302	329,463	27,945	357,408	81,042	62,232	9,208	93,289	17,291	262,249	106,599	74,652
Louisiana & Arkansas.	10 mos.	2,922,079	330,890	3,252,969	605,186	693,232	89,248	935,029	126,138	2,443,892	902,909	662,075
Louisiana Ry. & Nav. Co.	Oct. 337	350,825	23,917	374,742	127,211	87,866	9,417	148,123	9,309	381,774	9,958	-8,042
Louisiana Ry. & Nav. Co.	10 mos.	3,007,232	235,335	3,242,567	887,631	1,255,881	104,939	1,370,210	106,035	3,033,512	380,038	199,300
Louisiana Ry. & Nav. Co. of Tex. Co.	Oct. 206	109,468	15,665	125,133	381,579	25,311	12,558	4,192	51,186	98,585	32,904	28,994
Louisiana Ry. & Nav. Co. of Tex. Co.	10 mos.	892,319	130,333	1,022,652	1,094,427	210,022	144,871	32,796	49,605	936,474	157,931	-51,837
Louisville & Nashville.	Oct. 5,042	9,850,102	1,839,483	11,689,585	1,772,860	2,848,379	213,130	4,193,472	257,991	9,297,489	3,224,093	2,543,131
Louisville & Nashville.	10 mos.	84,724										

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road	Average mileage operated during period	Operating revenues—Total			Operating expenses—			Operating ratio	Net from railway operation	Operating income (or loss)	Net after rents, 1923.
		Freight	Passenger (inc. misc.)	Maintenance of way and structures	Traffic	Transportation	General				
Minneapolis & St. Louis.....	1,637	\$1,445,635	\$92,607	\$1,614,564	\$28,667	\$612,532	\$44,901	79.40	\$332,195	\$254,601	\$178,754
10 mos.	1,637	10,690,358	1,187,084	12,584,246	279,337	5,638,854	448,314	98.40	206,374	-108,696	723,141
Minneapolis, St. P. & S. S. Marie.....	4,402	4,650,081	5,480,039	5,518,612	738,722	1,782,973	1,111,844	99.60	2,213,049	1,896,832	1,728,977
10 mos.	4,402	28,835,553	35,878,650	35,812,171	5,891,301	15,550,507	10,111,844	78.90	8,195,836	5,717,564	4,858,807
Mississippi Central.....	257	148,788	13,845	167,079	5,916	44,020	12,317	69.50	50,935	44,912	49,628
10 mos.	257	1,347,118	155,776	1,549,750	62,030	426,525	87,850	71.60	440,503	370,668	417,369
Missouri & North Arkansas.....	364	1,010,741	200,112	1,304,385	28,757	18,518	7,123	73.10	42,646	41,741	29,792
10 mos.	364	6,364,741	1,200,112	7,564,853	155,757	118,518	45,341	88.50	150,168	125,383	94,336
Missouri-Kansas-Texas.....	1,799	2,875,417	440,261	3,595,935	57,495	816,548	93,037	63.26	1,322,646	976,601	1,001,895
10 mos.	1,804	21,552,754	4,468,237	28,155,223	519,521	7,618,888	920,469	68.30	9,338,433	6,819,183	7,138,489
Mo.-Kansas-Texas of Texas.....	1,389	2,011,439	464,894	2,669,646	44,882	742,634	74,013	60.90	1,043,846	995,285	788,653
10 mos.	1,389	12,253,418	4,160,650	17,918,047	412,235	6,415,811	675,271	72.90	4,854,299	4,361,284	2,695,105
Missouri Pacific.....	7,361	9,943,383	1,405,054	12,276,378	212,202	4,473,774	337,658	76.50	2,882,380	2,487,588	1,855,400
10 mos.	7,362	78,021,191	14,727,026	101,201,985	2,119,625	38,186,767	3,083,829	80.26	20,084,635	16,273,365	12,593,781
Mobile & Ohio.....	1,165	1,503,377	140,212	1,749,999	40,511	569,913	47,739	71.30	501,541	393,174	370,437
10 mos.	1,165	13,863,260	1,541,700	16,322,260	468,621	5,643,410	483,085	72.70	4,463,356	3,579,719	3,094,113
Monongahela.....	106	433,523	25,020	463,335	993	122,920	9,541	48.50	238,407	220,846	159,322
10 mos.	106	3,524,712	278,350	3,848,909	10,499	1,116,978	97,248	63.90	1,389,916	1,277,030	703,808
Monongahela Connecting.....	7	.....	.....	147,729	374	75,200	3,694	94.40	8,380	7,623	14,231
10 mos.	7	.....	.....	1,619,770	3,777	847,669	55,050	93.50	105,101	55,001	209,048
Montour.....	57	206,081	860	208,559	1,082	37,436	7,512	64.40	74,312	59,121	92,658
10 mos.	57	1,392,830	9,040	1,418,463	10,235	346,088	73,238	85.00	212,888	136,273	471,281
Nashville, Chattanooga & St. Louis.....	1,259	1,565,040	383,076	2,113,763	64,397	723,589	71,411	78.50	453,488	403,328	418,668
10 mos.	1,258	14,224,349	4,044,068	19,693,758	740,434	7,376,803	678,292	83.10	3,327,404	2,754,079	2,750,384
Nevada Northern.....	165	82,944	9,369	98,336	811	15,581	4,758	42.20	56,840	51,466	51,471
10 mos.	165	751,696	97,655	906,064	9,093	161,309	46,082	49.00	461,649	397,666	394,726
Newburgh & South Shore.....	7	.....	.....	156,627	.....	4,124	135,856	88.00	20,771	7,623	13,454
10 mos.	7	.....	.....	1,664,364	.....	668,144	40,094	88.00	199,526	64,714	112,260
New Orleans Great Northern.....	274	216,370	28,158	254,319	4,885	76,002	10,450	63.60	92,548	60,441	48,741
10 mos.	274	2,023,963	310,796	2,365,201	54,264	766,206	111,112	69.90	742,596	549,758	440,446
New York Central.....	6,889	21,628,652	7,446,454	33,142,293	360,043	11,557,969	881,770	76.00	7,957,775	5,956,498	6,170,894
10 mos.	6,889	189,371,450	80,900,779	308,710,154	3,573,579	112,308,004	8,960,097	75.30	76,215,770	56,358,025	54,478,306
Cincinnati Northern.....	244	409,847	8,167	427,884	5,498	130,656	5,212	66.30	169,686	141,784	118,354
10 mos.	244	3,800,674	115,745	3,998,743	56,238	1,325,450	84,043	66.70	1,332,925	1,115,737	733,867
Cleve., Cin., Chic. & St. Louis.....	2,417	6,324,898	4,978,245	10,223,143	1,24,554	2,839,106	206,605	73.60	2,175,961	1,726,864	1,649,748
10 mos.	2,410	53,223,101	13,921,069	73,065,107	1,183,788	27,041,577	1,956,061	76.40	17,211,860	13,199,337	11,740,618
Indiana Harbor Belt.....	119	.....	1,057,402	1,118,181	4,202	390,962	21,937	67.30	346,337	305,267	176,598
10 mos.	119	.....	9,091,702	1,223,336	46,247	4,019,293	227,731	75.50	2,230,727	1,957,903	787,414
Michigan Central.....	1,862	5,491,519	1,494,920	7,791,764	104,229	2,647,066	147,783	68.00	2,492,867	1,946,615	1,906,257
10 mos.	1,862	49,273,358	17,378,224	73,800,410	1,029,437	25,603,348	1,565,574	70.20	21,968,849	17,298,935	16,443,241
Pittsburgh & Lake Erie.....	231	2,326,537	239,263	2,657,801	18,379	843,449	71,642	82.70	458,950	286,648	681,066
10 mos.	232	22,625,999	2,588,740	26,210,838	240,116	8,509,233	710,838	81.30	4,911,044	3,321,194	6,719,539
New York Chicago & St. Louis.....	1,695	4,648,848	160,272	4,978,245	116,214	1,642,010	161,770	70.40	1,472,291	1,248,101	1,194,574
10 mos.	1,695	41,602,731	1,778,243	45,016,584	1,185,760	16,541,137	1,543,792	75.50	11,046,617	8,742,984	7,525,986
N. Y., New Haven & Hartford.....	1,979	5,855,611	3,968,851	11,068,561	82,689	4,039,784	292,548	74.70	2,799,688	2,395,740	1,912,172
10 mos.	1,989	52,825,719	41,516,661	105,897,850	671,975	39,899,212	2,835,296	77.70	24,188,212	20,116,974	15,796,392
Central New England.....	292	623,727	12,413	709,005	5,437	215,713	13,053	77.00	183,162	171,462	103,063
10 mos.	295	6,397,601	130,450	6,743,572	51,001	2,186,172	120,047	72.40	1,860,340	1,603,066	1,301,752
New York Connecting.....	20	215,500	.....	215,500	.....	45,474	1,303	28.60	125,944	153,444	117,816
10 mos.	20	1,961,055	.....	2,408,681	.....	465,173	13,045	36.40	1,738,571	1,348,221	986,665
New York, Ontario & Western.....	569	831,829	93,646	1,112,235	15,195	489,317	34,102	83.30	2,886,666	1,631,559	1,220,823
10 mos.	569	7,448,090	2,587,291	11,711,683	154,935	4,997,702	354,140	79.50	2,396,452	1,945,692	1,518,882
Norfolk & Western.....	2,240	7,862,749	702,506	8,875,666	90,963	2,505,749	169,141	66.00	2,935,892	2,360,632	2,562,471
10 mos.	2,240	66,531,283	7,331,222	77,241,247	884,114	24,340,524	1,682,524	74.70	19,577,335	13,316,413	14,882,490
Norfolk Southern.....	931	621,866	21,993	762,800	22,463	3,046,667	29,712	72.90	206,376	163,542	138,049
10 mos.	931	6,296,638	1,066,571	7,806,415	241,120	3,096,033	291,712	74.00	1,960,167	1,527,231	1,159,562
Northern Pacific.....	6,700	9,054,470	953,338	10,793,424	145,762	3,272,001	231,349	56.30	4,716,208	3,823,286	3,916,207
10 mos.	6,675	59,094,216	11,311,098	77,499,409	1,620,391	28,087,060	2,274,922	76.50	18,243,232	11,210,388	12,036,616
Northwestern Pacific.....	489	400,608	617,844	98,023	5,594	246,603	444,389	72.00	173,255	127,153	117,906
10 mos.	489	3,539,793	2,025,587	6,169,478	65,202	2,262,064	178,453	71.40	1,763,938	1,306,136	1,211,401

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF OCTOBER AND TEN MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rents.	Net after rents, 1923.
		Freight.	Passenger.	Total.	Way and structures.	Traffic.	Portation.					
Pennsylvania R. R.	Oct. 10, 508	\$42,237,235	\$11,904,884	\$54,142,119	\$7,664,819	\$14,048,961	\$643,561	\$21,499,853	\$1,431,301	\$40,494,270	\$8,588,632	\$4,476,911
	10 mos.	10,508	369,010,995	124,135,914	510,453,065	60,148,220	131,838,930	14,256,919	429,297,478	79,400	111,155,557	68,475,124
Baltimore Chesapeake & Atlantic.	Oct. 125	98,775	33,827	140,104	16,204	17,142	1,829	85,518	3,332	124,025	83,585,096	67,710,330
	10 mos.	110	865,982	380,850	1,299,827	128,677	247,991	20,215	1,223,858	94,500	75,969	111,097
Long Island	Oct. 397	982,109	1,707,408	2,689,517	524,942	524,942	1,304,346	75,123	2,346,243	80,300	576,418	232,814
	10 mos.	397	8,594,267	18,967,497	28,561,764	3,650,543	3,650,543	218,179	12,699,956	74,200	7,689,430	3,856,695
West Jersey & Seashore.	Oct. 360	428,057	478,681	906,738	191,006	218,238	19,931	496,156	958,491	97,500	24,506	113,101
	10 mos.	360	3,681,083	6,881,107	11,297,251	1,677,776	2,009,841	180,287	5,023,021	81,400	2,096,442	1,053,515
Peoria & Pekin Union	Oct. 19	34,133	4,197	38,330	20,055	73,140	7,551	163,007	7,551	163,007	197	39,871
	10 mos.	19	262,099	27,186	1,486,853	278,326	155,971	7,367	668,691	91,000	297,875	435,385
Pere Marquette	Oct. 2,292	3,491,998	286,672	4,020,111	367,133	716,167	56,929	1,217,192	105,085	1,509,571	1,178,029	855,238
	10 mos.	2,292	27,863,268	4,199,478	34,951,081	4,332,540	7,159,682	526,814	12,840,280	73,500	1,509,571	1,178,029
Pittsburgh & Shawmut	Oct. 102	111,305	2,802	114,107	9,554	32,129	7,068	82,000	82,000	35,129	16,467	27,951
	10 mos.	102	854,267	46,123	1,486,853	278,326	155,971	7,367	668,691	91,000	297,875	435,385
Pittsburgh & West Virginia.	Oct. 92	360,189	47,453	407,642	38,875	97,890	4,852	84,473	21,561	253,952	5,084	140,118
	10 mos.	92	2,999,222	83,106	3,426,872	393,853	916,083	46,693	730,538	70,000	1,028,989	1,088,872
Pittsburgh, Shawmut & Northern.	Oct. 210	159,874	2,987	162,861	27,832	32,187	1,712	57,212	5,140	124,033	40,151	35,223
	10 mos.	210	1,117,808	47,831	1,209,639	250,234	325,657	16,740	493,295	94,100	71,228	44,345
Quincy, Omaha & Kansas City.	Oct. 250	72,679	18,508	91,187	37,033	126,666	2,887	98,959	1,360	1,160	2,747	1,140
	10 mos.	250	586,477	209,209	885,295	315,273	155,057	9,534	945,542	106,800	60,137	133,630
Reading Company	Oct. 1,148	6,840,610	850,870	8,061,096	1,051,137	1,730,528	75,274	2,758,386	170,980	5,805,750	2,072,237	1,693,915
	10 mos.	1,148	64,416,257	8,524,660	76,380,914	9,197,550	18,210,546	723,569	26,512,099	76,400	18,050,039	15,899,735
Atlantic City	Oct. 169	351,834	150,591	502,425	31,176	118,660	1,454	292,279	4,351	356,195	11,600	120,467
	10 mos.	169	1,226,535	275,830	4,181,323	1,073,929	319,170	857,500	2,085,735	86,400	366,615	85,678
Perkinston	Oct. 41	94,730	5,122	103,778	11,172	7,272	107	45,939	835	65,367	34,051	28,492
	10 mos.	41	899,326	63,650	999,471	96,922	57,442	1,082	430,657	63,000	34,411	32,471
Port Reading	Oct. 21	165,095	6,000	171,095	20,356	24,338	2,229	67,389	1,479	103,699	50,506	103,887
	10 mos.	21	1,384,938	6,000	1,744,444	227,895	98,603	695,987	28,224	1,052,957	60,457	562,212
Richmond, Fredericksburg & Potomac	Oct. 117	383,699	296,609	857,618	102,662	113,862	9,656	324,893	33,375	601,581	180,493	163,266
	10 mos.	117	4,842,736	3,374,420	8,217,156	1,154,976	1,757,831	92,893	3,283,253	66,000	3,291,892	2,206,930
Rutland	Oct. 413	332,295	100,488	574,224	120,961	112,883	9,262	226,610	14,350	485,796	61,734	69,517
	10 mos.	413	3,086,306	1,213,554	5,004,838	1,047,407	1,015,952	88,777	2,241,385	82,500	961,011	717,152
St. Louis-San Francisco.	Oct. 4,747	6,432,199	1,432,371	8,413,330	1,113,542	1,540,735	91,536	2,516,607	205,389	5,441,270	2,457,285	2,387,784
	10 mos.	4,747	50,991,982	15,023,622	70,515,195	8,879,889	14,334,134	965,419	23,788,547	20,763,485	16,995,606	15,232,299
Ft. Worth & Rio Grande.	Oct. 235	100,536	24,818	135,622	29,740	23,694	5,271	120,132	87,800	16,900	12,862	3,940
	10 mos.	235	897,839	252,393	1,266,466	211,331	240,510	38,164	569,239	88,500	148,078	16,428
St. Louis San Francisco & Texas.	Oct. 134	201,867	18,377	220,244	29,333	32,515	4,893	66,973	7,656	141,377	85,643	58,994
	10 mos.	134	1,361,284	140,739	1,574,486	242,896	263,796	47,517	568,860	75,500	385,276	363,497
St. Louis Southwestern.	Oct. 969	1,582,315	148,556	1,730,871	1,821,617	239,079	56,228	397,834	65,798	1,134,153	569,877	501,503
	10 mos.	969	12,439,259	1,466,678	14,694,819	2,003,988	3,140,608	480,004	3,777,178	600,304	3,339,017	3,191,079
St. Louis Southwestern of Texas.	Oct. 807	670,532	99,973	837,532	189,770	159,312	23,970	289,333	33,329	700,753	111,044	140,224
	10 mos.	807	5,078,312	924,785	6,537,219	1,511,584	1,725,119	2,585,152	308,680	6,389,525	97,700	147,654
San Antonio & Aransas Pass.	Oct. 739	719,565	76,502	843,786	138,703	156,263	13,433	253,350	22,432	581,145	262,641	217,861
	10 mos.	739	5,052,707	744,727	6,168,694	1,279,348	1,312,828	114,632	2,208,706	82,900	1,052,848	727,818
San Antonio, Uvalde & Gulf.	Oct. 317	83,465	18,379	114,107	19,133	12,825	4,957	49,709	6,044	92,668	17,134	6,542
	10 mos.	317	997,945	199,569	1,066,389	228,690	143,832	45,025	534,156	70,200	294,233	259,413
Seaboard Air Line.	Oct. 3,571	3,119,098	709,733	4,277,288	685,620	808,672	126,969	1,559,055	165,963	3,389,537	703,425	731,717
	10 mos.	3,571	31,119,098	7,914,072	43,524,196	6,197,904	7,593,019	1,405,130	16,483,966	78,000	9,551,439	7,639,457
Southern Ry.	Oct. 6,868	9,306,014	2,394,609	12,757,515	1,808,302	2,224,838	225,155	4,039,650	331,027	8,706,991	3,405,983	3,272,053
	10 mos.	6,868	83,379,883	25,941,072	117,779,603	16,547,398	21,408,639	2,232,569	3,221,166	86,173,251	25,330,458	23,991,235
Alabama Great Southern.	Oct. 318	714,326	157,268	939,218	134,814	164,152	19,314	260,912	23,941	610,242	326,976	287,534
	10 mos.	318	6,122,098	1,716,807	8,352,282	1,260,383	1,792,654	205,603	2,634,867	74,400	2,157,777	1,972,824
Cin., New Orleans & Texas Pacific	Oct. 338	1,462,916	290,564	1,875,116	271,731	387,494	517,986	48,596	1,273,406	67,900	601,710	502,252
	10 mos.	338	13,922,691	3,384,330	18,281,956	2,729,068	3,741,728	395,774	4,755,990	70,200	5,445,756	4,664,508
Georgia Southern & Florida.	Oct. 401	295,664	121,496	453,103	65,050	61,404	8,824	152,098	10,814	300,701	134,165	94,940
	10 mos.	401	2,735,158	1,127,686	4,531,619	704,149	568,181	95,727	1,524,844	72,500	1,147,293	961,693
New Orleans & Northwestern.	Oct. 207	416,040	75,440	554,208	66,777	90,058	10,211	144,259	15,576	331,036	161,070	137,988
	10 mos.	207	3,536,715	837,987	4,725,492	667,333	873,548	114,417	1,421,556	69,300	1,445,497	1,067,845
Northern Alabama	Oct. 110	114,557	11,480	130,483	21,882	6,882	2,146	39,831	2,981	73,732	54,726	22,465
	10 mos.	110	1,071,369	125,693	1,229,457	206,069	58,716	23,473	407,087	59,100	502,363	164,462

(Continued from page 1134)

miles, while one locomotive has been equipped and nine others will be by January 1. This, the petition says, constitutes a bona fide effort to secure and install a device that will comply with the commission's order, and warrants additional time to complete the work.

The Delaware & Hudson Company has petitioned the commission to be exempted from the order of June 13, 1922, contending that its financial condition does not warrant such expenditures when other improvements are needed. The company says it has made serious efforts to install the automatic train control, but that its experiments to date do not justify such an expenditure as the commission contemplates. Experiments have been made with many systems of automatic train control on three miles of road but the device needs further development.

The railroad further says it has ordered all material for the installation of automatic train control, beginning at Rouses Point, N. Y., and extending southward for one division. It declares that this will be installed and tested as soon as possible.

Indiana State Fair Traffic

Statistics compiled since the holding of the state fair at Indianapolis, Ind., show that 36,000 more people attended the fair in 1924 than in 1923; and this increase is attributed to co-operative efforts of the railroads, the State Board of Agriculture and the Extension Department of Purdue University. Early in the spring a plan was formulated whereby an extension man from Purdue University or a county agent representing that institution, and a railroad representative, held meetings in every county in Indiana to encourage attendance at the fair. Local organizations also held meetings in the smaller communities and obtained lists of people who might attend. These representatives took pains to emphasize the advantages of going to the fair by train in preference to the use of automobiles. Special fair trains had not been run for a number of years but after the advantages of trains had been made known ample patronage was assured to warrant their operation. Arrangements were made by the railroads to move the trains from Indianapolis direct to the fair grounds over the Chicago, Indianapolis & Indiana, the only road serving the fair grounds, instead of stopping at the Union Station, which is several miles from the grounds by street car. Special trains were run from the fair grounds after the night horse show, so that visitors had as much time on the grounds in one day as would be afforded by a two-day visit under former conditions.

A. R. A. to Investigate Power Brakes

The American Railway Association has completed plans for a complete study and exhaustive investigation of power brakes and appliances for operating power brake systems. The investigation, the cost of which will be borne by the American Railway Association, will be conducted by Harley A. Johnson, assistant general manager of the Chicago Rapid Transit Railway, who, as director of research, will employ such assistants as may be necessary for conducting the work.

The American Railway Association, after conferences with the director of the Bureau of Safety of the Interstate Commerce Commission has agreed on the following plan:

1. Steps will be taken to obtain appliances, which, it is claimed, meet the views of the Interstate Commerce Commission, as indicated in its preliminary report and conclusions. If the plans or specifications for such appliances are available and the appliances are not yet being manufactured, steps will be taken by the director of research to secure such appliances, even to the extent of entering into an agreement to have such appliances made.

2. As soon as such appliances have been obtained they will be given exhaustive tests on the test rack at Purdue University, Lafayette, Indiana, which rack will be completely prepared and brought up to date for the purpose of this investigation.

3. Following the completion of the rack tests such devices will be given road tests, to develop whether or not they meet road conditions safely in service.

4. This program will be carried out with all dispatch and as promptly as the devices for these tests are available.

The investigation will also embrace such further study as may in the judgment of the director of research throw further light upon this problem.

Traffic News

The Edmonton, Dunvegan & British Columbia has established tri-weekly freight service over its new branch line between Berwyn, Alta, and Whitelaw.

The Missouri & North Arkansas agricultural department conducted business men and farmers on a tour through the grape section in Arkansas on December 10.

The Little Rock (Ark.) Traffic Club, at its annual meeting, chose as president for the ensuing year Max Mayer, president of the Scott-Mayer Commission Company; vice-president, W. B. Wier; secretary, J. A. Lee.

The Atchison, Topeka & Santa Fe will establish daily through sleeping car service between Chicago and Phoenix, Ariz., on January 3. Westbound, leave Chicago at 8 p. m. and arrive in Phoenix at 7:45 a. m. on the third day.

The Missouri Pacific has created a special service bureau to keep shippers advised of the movement of freight shipments. At present the service will be confined to Red Ball shipments but later will be extended to other service.

The state of Colorado has filed a suit against 49 railroads in the middle west, charging discrimination and unfairness in freight rates on Colorado produce, particularly potatoes and cabbages. The suit alleges discrimination especially in the rates charged from Denver, Colo., and Colorado common points to the river market centers, tending to thwart the efforts of Colorado growers to compete in the Mississippi and Missouri river markets.

New Year Resolutions

The New York, New Haven & Hartford utilizes its dining-car bills of fare to print, for the benefit of New Englanders, some New Year's resolutions. They say, in part:

"I HEREBY RESOLVE, That throughout 1925 and each succeeding year I will seize every opportunity to acquaint the rest of the world with the purity of New England raw materials and the superiority of New England-made products; to interest all persons possible in the Nature-made beauties of New England's resorts; and to do everything in my power to advance the common welfare of New England by turning her tradition into trade and her resort beauty into new business."

Pacific Coast Passenger Prospects Are Favorable

The prospects for summer travel to the Pacific coast during 1925 are very favorable and tourist travel is expected to exceed all previous records. Among the important national gatherings for which arrangements have been completed are those of the Shriners at Los Angeles, Cal., the Knights Templar, the National Foreign Trade Council, the Northern Baptists and the American Library Association at Seattle, Wash., the Elks, the National Plumbers' Association, the National Federation of Music Clubs and the International Christian Endeavor at Portland, Ore., the Walther League, the National Hairdressers' Association and the National Electric Light Association at San Francisco and the Concatenated Order of Hoo Hoos at Spokane, Wash. The Chicago, Milwaukee & St. Paul anticipates an attendance of 100,000 at these and smaller conventions and has arranged for 75 special trains to take care of delegations to these gatherings.

Shippers Meet at Akron

The Great Lakes Regional Advisory Board held its tenth regular meeting at Akron, Ohio, on December 9 with an attendance of about 375.

The reports of the various commodity committees indicate a universal improvement in industrial conditions and the railroads were told that they would be called upon to furnish more cars in the first quarter of next year than were required at the opening of 1924. Reports of the railroads operating within the territory

of the Great Lakes Board indicated continued efficient operating conditions.

L. G. Macomber, president of the Board, presided at the meeting—short addresses were made by Mayor Rybolt, of the city of Akron; F. G. Sexton, secretary of the Toledo Chamber of Commerce; F. G. Robbins, vice-president of the Erie Railroad; J. J. Bernet, president of the New York, Chicago & St. Louis, and E. T. Whiter, vice-president of the Pennsylvania.

Southern Travel to Be Heavy

Passenger travel to the South from Chicago this year is expected to exceed that of last year. During the winter season from November 1, 1923, to March 31, this year, 177,000 persons paid fares from Chicago to southern resorts, while 25,000 other persons traveled through Chicago on their way south. If the rate of travel already established holds up through the season traffic representatives of the roads interested—the Illinois Central, the Chicago & Eastern Illinois, the Cleveland, Cincinnati, Chicago & St. Louis, the Wabash and the Pennsylvania—estimate that about 32,000 Chicagoans will buy tickets to the South this winter. Members of the Illinois Athletic Club will take a trip through the Caribbean Sea on a chartered steamship during February, the Chicago Athletic Club is promoting a trip south, the Hamilton Club will take its members on an excursion to Florida and Cuba, members of the Chicago Real Estate Board will attend the mid-winter convention of the National Association of Realtors at Dallas, Tex., in January, and will take a trip from New Orleans, through the Caribbean Sea.

Trains to the Golden State

The Chicago, Rock Island & Pacific and the Southern Pacific will on December 28 put new cars on the Golden State Limited running between Chicago and southern California. These companies will also inaugurate the Golden State Express to relieve the Golden State Limited of local work and permit a reduction in running time of the Limited. The Golden State Limited will be an all-Pullman train with observation car, diner and men's club car. Each train will carry a maid, a barber and a tailor and will be equipped with baths for both men and women, telephones and a reading library. The observation car will have a lounging room for women. The Golden State Express will have an observation car, standard sleepers, a diner, tourist cars and coaches. It will leave Chicago at 6 p. m. and arrive in Los Angeles at 2:15 p. m. the third day. Eastbound, it will leave Los Angeles at 10 a. m. and arrive in Chicago at 7:59 a. m. the third day. The Golden State Limited will leave Chicago at 8:30 p. m. and arrive in Los Angeles at 2:45 p. m. the third day. Returning the train will leave Los Angeles at 11:45 a. m. and arrive in Chicago at 10:00 a. m. the third day.

Difference Between an Agent and an Attendant

The New York State Public Service Commission has authorized the Erie Railroad to discontinue the service of an agent at Pine City, near Elmira, on its Tioga division, subject to eight conditions: (1) passenger trains operated by the road and now stopping at Pine City shall continue to stop there; (2) the waiting room of the station shall be open daily at least 15 minutes prior to the scheduled arrival of each passenger train stopping at the station, and remain open until after the actual departure of such train; (3) the waiting room shall be kept clean, heated and lighted; (4) the railroad shall provide an attendant who shall keep open the freight house and baggage room for the reception of prepaid l. c. l. freight, express or baggage, at least one hour in the forenoon and one hour in the afternoon of each week day, which hour shall be an hour during which passenger trains are scheduled to arrive and depart; (5) the attendant shall place upon the next passenger train proceeding to the required destination, after its receipt, any cream, eggs or other perishable articles offered for shipment by express, collect; (6) the company shall direct its train crews to deposit all incoming freight and baggage in the freight house and baggage room, such room shall be locked by the attendant upon his departure from the station; (7) the railroad company shall not receive and ship outbound l. c. l. freight and baggage from Pine City, but shall receive and ship all such freight and baggage at its Seeley Creek station; (8) the railroad shall deliver bills of lading for outbound carloads from Pine City station which shall be signed by the Seeley Creek agent.

Commission and Court News

Interstate Commerce Commission

The commission has ordered an investigation of the divisions of freight rates in the Eastern group, excluding New England, with a view to prescribing just, reasonable and equitable divisions in case the existing divisions are determined to be unjust, unreasonable, inequitable or unduly preferential or prejudicial.

The Interstate Commerce Commission has made public a tentative report by Examiner-Attorney Sweet recommending a finding by the commission that the increased divisions for the Missouri & North Arkansas on traffic interchanged with its connections as previously prescribed by the commission, be now found just, reasonable and equitable, after a showing by the connecting lines of their experience under the divisions previously prescribed.

State Commissions

The public service commission of New York has authorized the New York Central to discontinue regular train service between Suspension Bridge, N. Y., and Lewiston, 5 miles. Passenger traffic is to be taken care of by the Niagara Gorge (electric) Railway and by a bus line operated by the Gorge railroad.

Art in the Railroad World

A Bureau of Fine Arts is now a feature (potentially) of the machinery provided for railroad regulation in the state of New York; that is to say, the state architect's office has such a bureau, and it is empowered to pass on the design of any bridge or other structure which is paid for in whole or in part out of the state treasury. This will include bridges which are built to take the place of grade crossings and which are paid for partly by state money. By a law passed this year, no such structure may lawfully be begun until this approval has been given. The law provides, however, that if the Bureau does not take action on a given plan within 45 days, its approval shall be presumed. This Bureau, or commission, consists of nine members, of which the State architect is one, and the superintendent of public works another. The law, which is Chapter 228, became effective on April 23, 1924. It deals mainly with structures intended for ornamentation or commemoration; but, in one section, specifically includes "buildings, bridges, approaches, gates and fences," regardless of the purpose for which they are designed. The public service commission, which is primarily responsible for highway bridges over railroads, where their construction is partly paid for by the state, has been in conference with the State architect concerning the administration of the new law.



P. & A.

Body of Samuel Gompers Arriving at Pennsylvania Station, New York

Labor News

The Howell-Barkley railroad labor bill now pending before Congress, was denounced by Ben W. Hooper, chairman of the United States Railroad Labor Board, at a luncheon of the Michigan Alumni Association of Chicago on December 15.

A wage increase of three cents an hour has been granted by the Railroad Labor Board to section foremen on the Louisville & Nashville, with an increase of two cents an hour to assistant foremen. Laborers and carpenters were refused increases.

The Southern Pacific and its engine service employees, represented by the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen have reached an agreement in their dispute over proposed wage increase and changes in working rules, and all danger of a strike is averted. The negotiations were reopened between the brotherhoods and the management at the request of the employees after an overwhelming majority of the men had voted in favor of a strike.

Chicago & Alton Enginemen

The Chicago & Alton has granted a wage increase of approximately five per cent to its engineers and firemen, retroactive to July 1, 1924. This increase is the same as that granted by the Railroad Labor Board in its decision involving most of the western roads, except the Alton; but the changes in working rules contained in the board's decision were not obtained by the management of the Alton. The agreement between the Alton and the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen was made after the brotherhoods had threatened drastic action in the form of a strike if their demands were not agreed to.

New Schedule for C. N. R.

Canadian Brotherhood Members

Standard working schedules for all employees, brought about by a revision and co-ordination of the schedules in effect on the separate lines comprising the Canadian National System before their amalgamation; enlargement of seniority and promotion groups so as to allow transfer from one department to another without loss of seniority under certain conditions; reduction of staff, instead of reduction of hours, except where locally agreed otherwise, when a reduction of expenses is necessary; establishment of rates for certain classes whose wages fall below average, raising them to the average; provision for one day off in seven where possible, and time and one-half for overtime, these were the principal provisions outlined in a statement issued last week by the committee of the company and of the men, embodying a new schedule for 15,000 employees in Canada of the Canadian National Railways who are members of the Canadian Brotherhood of Railroad Employees. The working rules become effective from September 16 and the wage schedule as from August 1.

Labor Leaders Oppose Third Party Plan

The National Committee of the Conference for Progressive Political Action, which conducted the La Follette-Wheeler campaign, at a meeting in Washington on December 12 decided to call a national convention to be held at Chicago on February 21 to consider the advisability of the organization of a third party. The resolution was adopted by a vote of 30 to 13 and it was announced that a majority of those voting in the negative were representatives of the railroad labor organizations, who took an active part in the La Follette campaign. They said that they opposed the convention proposal in accordance with instructions from their chief executives. It is reported that the railroad labor leaders are more inclined to favor throwing the so-called "progressive" strength to the Democratic party and for the candidacy of William G. McAdoo. The American Federation of Labor is also opposed to the third party plan.

Foreign Railway News

Italy Wipes Out Railway Deficit

According to a radio dispatch from Rome to the New York Times, the Italian government has succeeded in wiping out the deficit of the government railroads and will this year turn the result into a profit of 25,000,000 lire.

China Defaults on Railroad Bond Interest

The Chinese government is reported to have defaulted on the payment of interest on the 5 per cent bonds of the Hu Kuang Railway, the semi-annual payment of which was due in New York on December 1. The default is believed to be due to the civil war in China and is expected to be only temporary.

Payment of Interest on Ecuador Road's Bonds

It is reported that the government of Ecuador will resume shortly the payment of interest on the 5 per cent first gold bonds of 1899 of the Guayaquil & Quito Railway. No interest has been paid on these bonds since 1912. It is known that the government of Ecuador has interested itself in improving its financial position and the resumption of interest payments on these bonds is thought to be the first step in this direction.

Northern of France Provides Homes for

31,435 Persons in Garden Villages

The Northern (France), according to the *Revue Générale des Chemins de Fer* (Paris), by the end of 1923 had built a total of 32 garden villages for the housing of its employees. These villages had 9,053 houses which gave shelter to 31,435 employees and their families. The houses leave nothing to be desired from a point of view of comfort and sanitation and, what is most important, they are well-planned architecturally and are built under a previously-laid-out plan so that they conform with one another. Streets and parks are also carefully planned, athletic fields laid out and a good quality of water supplied. The houses are all electric-lighted.

An interesting result of the establishment of these villages is the increase in the birth rate, a subject which is of greatest interest to the public authorities of France. In these villages the rate was 2.89 per cent in 1921 and 2.92 per cent in 1922. This figure is 15 per cent higher than for that of the Northern Railway as a whole and 72 per cent above that of the nation. Similarly the death rate is low, being 4.9 per 1,000 as against 18 per 1,000 for the nation. Infant mortality is said to be particularly low.

Practically all the villages have modern sanitary schools where plenty of fresh air and sunshine is provided. Medical clinics and dispensaries and visiting nurses are also provided.

The intimate association of the company's employees in these villages has promoted the closest contact between them. As a result any number of societies have sprung up among the company's employees—consumers' co-operatives, mutual benefit associations, musical and amateur theatrical organizations and athletic societies. The officers of the company do not attempt to manage these villages but serve only to keep them in touch with each other.

At the head of all social activities in these cities is a triumvirate. This committee has no administrative duties but serves to stimulate local activity. Actual administration in each village is carried on by a municipal council composed of three functionaries appointed by the triumvirate and by representatives elected by the residents, one for each 50 households. The interest of the citizens in civic affairs has been observed to be very great in these villages.

Other French railways have also done considerable work to provide housing for employees and their families. The P. L. M. has 12,728 such apartments; the Southern has done much to aid employees in financing purchase of homes; the State Railway houses 7,000 employees; the Eastern has built 976 homes and assists in financing; and the Paris-Orleans has built several garden villages and has purchased several blocks of apartment houses for the use of its staff, likewise offering assistance in financing for employees who wish to purchase their own homes.

Equipment and Supplies

Locomotives

GUGGENHEIM BROTHERS, New York, are inquiring for 9 locomotives.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of November 29 as inquiring for 10 Mikado type locomotives, has ordered this equipment from the Baldwin Locomotive Works.

THE NEW YORK CENTRAL has ordered 7 electric switching locomotives and 2 electric freight locomotives from the General Electric Company for use on its Port Morris branch; contracts have also been let to the Lima Locomotive Works for 10 locomotive tenders of 16,000 gal. capacity, for the Pittsburgh & Lake Erie.

THE LOUISVILLE & NASHVILLE has ordered 8 Mikado type locomotives from the American Locomotive Company. These locomotives will have 27 by 32 in. cylinders and a total weight in working order of 324,000 lb. This is in addition to the 16 locomotives ordered from the same company and reported in the *Railway Age* of December 6.

THE MISSOURI PACIFIC, reported in the *Railway Age* of December 13 as having placed an order for 45 locomotives with the American Locomotive Company, has ordered 10 Pacific type and 35 Mikado type locomotives from the American Locomotive Company. The Pacific type will have 27 by 28 in. cylinders and a total weight in working order of 290,000 lb., and the Mikado type will have 27 by 32 in. cylinders and a total weight in working order of 330,000 lb. An order has been given to the Baldwin Locomotive Works for five, 0-8-0 switching locomotives.

Freight Cars

THE MISSISSIPPI CENTRAL is inquiring for 100 flat cars.

THE FORD MOTOR COMPANY is inquiring for 475 gondola cars of 70 tons capacity and 50 flat cars of 50 tons' capacity.

THE INDIAN STATE RAILWAYS will receive bids until January 13 at London, England, for 2,000 goods wagons of various types.

GUGGENHEIM BROTHERS, New York, are inquiring for 140 ore cars of from 20 to 30 tons' capacity, 30 trailing cars and 3 flat cars for export.

THE NORTHERN PACIFIC reported in the *Railway Age* of November 15 as inquiring for 800 gondola cars, has ordered this equipment from the Ryan Car Company.

THE UNITED STATES FOOD PRODUCTS CAR LINE CORPORATION, New York, has ordered 50 tank cars of 8,000 gal. capacity from the American Car & Foundry Company.

THE WAITE PHILLIPS COMPANY has ordered 100 tank cars of 8,000 gal. capacity and 50 tank cars of 10,000 gal. capacity from the General American Tank Car Corporation.

THE CHICAGO, ROCK ISLAND & PACIFIC has placed orders for repairs to 750 refrigerator cars with the Pressed Steel Car Company in addition to order reported in the *Railway Age* of August 16.

CHICAGO BURLINGTON & QUINCY, reported in the *Railway Age* of December 6 as expecting to enter the market soon for box cars, is now inquiring for from 1,000 to 1,500 box cars of 50 tons' capacity.

THE LOUISVILLE & NASHVILLE reported in the *Railway Age* of December 6 as inquiring for 400 low side gondola cars of 55 tons' capacity and 600 steel, drop bottom gondola cars of 50 tons' capacity, has ordered this equipment from the Pressed Steel Car Company.

THE BALTIMORE & OHIO, reported in the *Railway Age* of November 22 as expecting to enter the market for box, gondola and flat cars, totaling 5,000, is now inquiring for 1,000 steel gondola cars, 1,000 steel A. R. A. box car bodies and 1,000 steel flat car bodies.

THE MISSOURI PACIFIC, reported in the *Railway Age* of December 6 as inquiring for 2,000 box cars and 1,000 automobile cars has ordered 1,000 box cars and 1,000 automobile cars from the American Car & Foundry Co., and 1,000 box cars from the General American Car Company. Contracts for 1,000 additional cars are expected to be placed in the near future. The Missouri-Pacific, reported in the *Railway Age* of December 13 as inquiring for 40 caboose cars, has ordered this equipment from the American Car & Foundry Company.

Passenger Cars

THE CENTRAL OF GEORGIA has ordered 6 passenger cars from the Pullman Car & Manufacturing Corporation.

THE BALTIMORE & OHIO has ordered 5 dining cars from the Pullman Car & Manufacturing Corporation.

THE SOUTHERN RAILWAY has ordered 7 additional baggage-express cars from the Pullman Car & Manufacturing Corporation.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of November 29 as inquiring for 23 steel coaches, 5 steel combination passenger and baggage cars and 2 steel club cars, has ordered the coaches from the Standard Steel Car Company and the combination cars and club cars from the Bethlehem Shipbuilding Corporation.

Iron and Steel

THE KANSAS CITY SOUTHERN has ordered 3,000 tons of rails from the Bethlehem Steel Corporation, 2,000 tons from the Colorado Fuel & Iron Co., and 1,000 tons from the Inland Steel Company.

THE SOUTHERN PACIFIC has ordered 22,500 tons of 90 lb. or 110 lb. rail, 39 ft. in length, from the Colorado Fuel & Iron Company. This is in addition to the order for 22,500 tons, also of 39 ft. length, given to the Tennessee Coal, Iron & Railroad Company, reported in the *Railway Age* of December 13.

Miscellaneous

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon, January 5, 1925, for its requirements of frogs, switches, switch points, guard rails, point switches, etc.

THE NORFOLK & WESTERN will receive bids at Roanoke, Va., until 12 o'clock noon, December 31, for its requirements from January 1 to March 31, 1925, of couplers and parts; wire fencing; locomotive steel tires and steel springs. Bids are also wanted for 2,000 tons of steel plates, shapes and bars.

LOCOMOTIVE REPAIR SITUATION

Date, 1924	No. locomotives on line	No. serviceable	No. stored serviceable	No. req. classified repairs	Per cent	No. req. running repairs	Per cent	Total req. repairs	Per cent
February 1	64,377	53,586	4,116	5,919	9.2	4,872	7.6	10,791	16.8
March 1	64,431	53,127	3,800	6,047	9.4	5,257	8.1	11,304	17.5
April 1	64,363	52,805	4,648	6,128	9.5	5,430	8.4	11,558	17.9
May 1	64,330	52,890	6,079	6,165	9.5	5,335	8.3	11,440	17.8
June 1	64,373	53,498	6,661	6,099	9.5	4,776	7.4	10,875	16.9
July 1	64,416	53,382	7,117	6,035	9.4	4,999	7.7	11,034	17.1
August 1	64,486	53,381	7,152	6,073	9.4	5,032	7.8	11,105	17.2
September 1	64,582	53,618	6,762	6,023	9.3	4,941	7.7	10,964	17.0
October 1	64,538	53,209	5,424	6,175	9.6	5,154	8.0	11,329	17.6
November 1	64,486	53,391	4,776	6,191	9.6	4,904	7.6	11,095	17.2

Supply Trade News

The Pawling & Harnischfeger Company, Milwaukee, Wis., has changed its name to the **Harnischfeger Corporation**.

The Cleveland Twist Drill Company, Cleveland, Ohio, plans the construction of one, two and four-story plant additions to its factory at Cleveland.

The Linde Air Products Company has opened a branch office at Salt Lake City, Utah, in charge of **R. L. Strobel** and another office at Seattle, Wash., in charge of **C. E. Rheim**.

J. F. Kroske has been appointed manager of pneumatic tool sales for the **Ingersoll-Rand Company**, in the Pittsburgh territory. Mr. Kroske's headquarters are at Pittsburgh, Pa.

The **McMyler Interstate Company** has acquired from the **Fogarty Excavating Appliances Company, Inc.**, Rochester, N. Y., the right to manufacture and sell the Fogarty bucket.

D. E. Sawyer, formerly general sales manager of the Pollak Steel Company, New York, has been appointed vice-president of the **Wanner Malleable Castings Company**, Hammond, Ind.

C. S. Price, First National Bank Building, Hazleton, Pa., has been appointed district representative for northeastern Pennsylvania of the **Conveyors Corporation of America**, Chicago. **E. E. Elliott** is associated with Mr. Price.

The **Magnetic Signal Company**, Los Angeles, Cal., has arranged with the **General Railway Signal Company, Ltd.**, Montreal, Que., for the handling of its Magnetic Flagman and accessories in the territory of Winnipeg and east thereof, and with the **Canadian Fairbanks-Morse Company**, Vancouver, to act as its agents for the territory west of Winnipeg.

O. M. Bostwick, New York representative of the publicity department of the **General Electric Company** and formerly advertising manager of the Sprague Electric Works, has tendered his resignation to take effect January 1, 1925. After a short vacation, it is expected that Mr. Bostwick will resume his activities in the technical publicity field in New York City.

The **Hopp-Patterson Company** has been organized under the laws of Illinois to engage in selling industrial equipment and supplies in Chicago. The organizers are **J. H. Hopp**, former vice-president of the Charles C. Kavin Company, and **J. B. Patterson**, district manager of the P. H. & F. M. Roots Company, Connersville, Ind. The equipment to be handled by the new company includes steam and centrifugal pumps, conveying and transmission equipment and air compressors.

The **Ramapo Ajax Corporation** has acquired the Elliot Frog & Switch Co., with headquarters at East St. Louis, Ill., and with plants at that point and at Pueblo, Colo. Effective January 1, these plants will be operated by the Ramapo Ajax Corporation, giving this company seven plants. **W. H. Elliot**, president of the Elliot Company, becomes a vice-president and director of the Ramapo Company, **Dickson Fairback**, vice-president of the Elliot Company becomes vice-president of the Ramapo Company, both with headquarters at East St. Louis, and **W. J. Fairback**, vice-president of the Elliot Company becomes vice-president of the Ramapo Company, with headquarters at Pueblo, Colo.

The **McClintic-Marshall Company**, Pittsburgh, Pa., has purchased the Morava Construction Company, which has a plant at Eighty-fifth and Stewart avenue, Chicago, and the Kenwood Bridge Company, which has a plant at 7749 Dante avenue, Chicago. The Morava Construction Company will be operated as the Morava works of the McClintic-Marshall Company, while the Kenwood Bridge Company will be operated as the Kenwood works of the McClintic-Marshall Company. President Morava will retire from active business. **Paul Willis**, president of the Kenwood Company, will be in charge of the Chicago district for the McClintic-Marshall Company as vice-president and manager.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has awarded a contract to **Lundgren & Carlson**, Topeka, Kan., for the construction of an addition to the eating house at Arkansas City, Kan., to cost \$40,000, as reported in the *Railway Age* of December 13.

BALTIMORE & OHIO.—This company has awarded to the **Bates & Rogers Construction Company** a contract for the construction of sub-stations at Atlantic Yard, South Beach and Grasmere, Borough of Richmond, New York City, in connection with the electrification of the Staten Island Rapid Transit; cost, approximately, \$50,000.

CANADIAN NATIONAL.—This company plans the construction of a car repair and paint shop at St. Catharines, Ont., to cost \$25,000.

CENTRAL OF NEW JERSEY.—This company has ordered a 50,000-gal. steel locomotive water service tank from the Chicago Bridge & Iron Works, to be placed on a 25-ft. tower to be erected at Raritan, N. J.

CHICAGO UNION STATION.—This company contemplates the construction of 15 additional stories on the union station building headhouse at a cost of over \$2,000,000.

FRUIT GROWERS' EXPRESS.—This company will build a car repair shop at Oakland City, an industrial suburb of Atlanta, Ga.; approximate cost, \$450,000.

ILLINOIS CENTRAL.—This company contemplates the construction of a freight and passenger station at Clarksdale, Miss.

ILLINOIS CENTRAL.—This company plans the construction, next year, of steel and concrete bridges across its tracks at Jackson boulevard and at Ninth street, Chicago.

The **ILLINOIS CENTRAL** has ordered 585 tons of structural steel for a locomotive erecting machine shop and a power house from the American Bridge Company.

KANSAS CITY SOUTHERN.—This company has awarded a contract to the Goodlander Construction Company, Kansas City, Mo., for the construction of a passenger station at DeQuincy, La. This company has also awarded a contract to the Goodlander Construction Company for the construction of a passenger station at Lake Charles, La., to cost \$22,000, as reported in the *Railway Age* of November 8.

LOS ANGELES JUNCTION.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the construction and operation of an industrial switching line of 7.64 miles in Los Angeles County, Calif.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—This company plans the construction of a second track from Wheeling, Ill., to Area, a distance of 10 miles. The construction of the passenger station at Area is also planned.

MISSOURI PACIFIC.—This company has awarded a contract to the Railroad Water & Coal Handling Company, Chicago, for the construction of an oil station at Smackover, Ark., reported in the *Railway Age* of December 6.

NORFOLK & WESTERN.—This company has awarded a contract to the Chicago Bridge & Iron Works for the furnishing and erection of two 100,000-gal. steel tanks 16 ft. 6 in. in diameter at Kermit, W. Va. A contract for a 200,000-gal. tank, 22 ft. 6 in. in diameter to be erected at Prichard, Va., has been awarded to the same company.

SOUTHERN.—This company is reported planning the construction of new shop buildings at Knoxville, Tenn., to replace the shops recently destroyed by fire with a loss of \$270,000.

SOUTHERN PACIFIC.—This company is reported to be planning the construction of a passenger station at Sacramento, Cal., to be 128 ft. by 370 ft., three stories in height and of reinforced concrete and steel construction.

Railway Financial News

ALABAMA & VICKSBURG.—Stock Dividend.—The stockholders on December 10 adopted the recommendation of the directors for an increase of the capital by \$2,100,000 to be distributed to stockholders of record as of January 2, 1925, as a 100 per cent stock dividend, subject to authorization and approval by the Interstate Commerce Commission. This dividend is intended to recoup the stockholders in part for expenditures on capital account defrayed out of net income of the company from July 1, 1909 to December 31, 1923, which would otherwise have been applicable for dividends.

ATCHISON, TOPEKA & SANTA FE.—Acquisition.—This company has applied to the Interstate Commerce Commission for authority for the acquisition and operation of the Tulsa & Santa Fe.

BALTIMORE & EASTERN.—Stock.—The Interstate Commerce Commission has issued a certificate authorizing this company to operate a line from Love Point to West Denton, Md., with a branch from Centreville Junction to Centreville, 40 miles, and to issue \$216,500 of common stock to be sold at par and the proceeds used in connection with the purchase of the property, formerly owned by the Maryland, Delaware & Virginia. The commission also authorized the Baltimore, Chesapeake & Atlantic to acquire control of the Baltimore & Eastern by purchase of its stock.

CHESAPEAKE & OHIO.—Bonds.—This company has applied to the Interstate Commerce Commission for authority nominally to issue \$8,203,000 of first lien and improvement 20-year 5 per cent mortgage bonds and to pledge under the mortgage \$741,000 of bonds of the Chesapeake & Ohio of Indiana.

CHICAGO & NORTHWESTERN.—Bonds.—This company has applied to the Interstate Commerce Commission for authority for the authentication and delivery of \$1,000,000 of general mortgage bonds to reimburse the treasury for expenditures in 1924.

CHICAGO, INDIANAPOLIS & LOUISVILLE.—Dividends.—This company has declared a dividend of $2\frac{1}{2}$ per cent on the common and the regular semi-annual dividend of 2 per cent on the preferred. Dividends are payable January 10 to stock of record December 27. The previous dividend on the common was 2 per cent declared June 12, 1924.

CHICAGO UNION STATION COMPANY.—Bonds.—The Interstate Commerce Commission has authorized an issue of \$7,000,000 of 5 per cent bonds, to be sold at not less than $96\frac{1}{2}$ and to be guaranteed by the proprietary companies.

DELAWARE & HUDSON.—Six Months Guaranty.—The Interstate Commerce Commission has certified to the treasury the amount of this company's guaranty for the six months period following the termination of federal control as \$3,140,528, of which \$438,028 was to be paid on the final certificate.

GULF COAST LINES.—Control by Missouri Pacific.—See article in *Railway Age*, of December 13, 1924, page 1080.

GULF, MOBILE & NORTHERN.—Bonds.—This company has applied to the Interstate Commerce Commission for authority to issue \$2,000,000 of first mortgage 6 per cent bonds to reimburse the treasury.

LEHIGH & HUDSON RIVER.—Dividends.—The directors on December 9 declared a quarterly dividend of 2 per cent out of the surplus earnings of the company, payable December 23 to stockholders of record December 9. An extra dividend of 2 per cent—making 10 per cent for the year—was declared payable the same time.

MISSOURI-KANSAS-TEXAS.—Preferred Dividend.—The directors have declared an initial dividend of $1\frac{1}{4}$ per cent on the preferred A stock, payable February 2 to stock of record January 15.

MISSOURI PACIFIC.—Control of Gulf Coast Lines.—See article in *Railway Age*, of December 13, 1924, page 1080.

NEW YORK, CHICAGO & ST. LOUIS.—Lease Terms.—See Pere Marquette.

PENNSYLVANIA, OHIO & DETROIT.—Consolidation.—This company, organized under the laws of Ohio and Michigan to effect a consolidation of the Cincinnati, Lebanon & Northern; the Cleveland, Akron & Columbus; the Toledo, Columbus & Ohio River, and the Pennsylvania-Detroit, all controlled and operated by the Pennsylvania, has applied to the Interstate Commerce Commission for authority to issue and deliver 284,100 shares of common stock, in exchange for all the stock of the constituent companies, and 31,000 shares to be sold at not less than par for capital purposes. The new company and the Pennsylvania have also applied for a certificate approving the acquisition and operation of the lines in interstate commerce.

PERE MARQUETTE.—Nickel Plate Lease.—The executive committee has approved the following terms, subject to the approval of the board of directors at the January 7 meeting, for non-assenting minority stockholders of the Pere Marquette:

As and when dividends at the rate of 6 per cent per annum are paid on preferred stock of the new company, an amount equal to dividends at the rate of 5 per cent per annum on prior preference stock and preferred stock of the Pere Marquette not owned by the new company—the amount so payable to be proportionately decreased in the case of the payment of dividends at the rate of less than 6 per cent per annum on the preferred stock of the new company.

As and when dividends at the rate of 6 per cent per annum are paid on common stock of the new company, an amount equal to dividends at the rate of $4\frac{1}{2}$ per cent per annum on the common stock of the Pere Marquette not owned by the new company—the amount so payable to be proportionately increased or decreased in case of the payment of dividends at the rate of more or less than 6 per cent per annum on common stock of the new company.

If a stockholder of the Pere Marquette does not desire to exchange his securities for those of the new Nickel Plate, he can have them appraised and the new system will purchase them.

Over 70 per cent of the entire shareholders of the Pere Marquette have already sent in proxies, assenting to the Nickel Plate plan, and more than a quorum of proxies for all of the constituent roads that go to make up the new system have already been received.

PITTSBURGH & WEST VIRGINIA.—Equipment Trust.—The Interstate Commerce Commission has authorized an issue of \$3,000,000 of 5 per cent equipment trust certificates, to be sold to Dillon, Read & Co., at not less than 97.109.

SOUTHERN PACIFIC.—Directorate.—Frederick D. Underwood, president of the Erie, and E. P. Swenson, have resigned as directors, and Walter Douglas and Cleveland H. Dodge have been elected in their places to allow the El Paso & Southwestern to have representation on the Southern Pacific board. Mr. Douglas has also been elected a member of the Southern Pacific's executive committee.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—Acquisition.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the acquisition and operation of the St. Louis Merchants' Bridge Terminal Railway, the East St. Louis Connecting and the St. Louis Transfer, all of the stock of which is now owned directly or indirectly. It is stated that unification and operation as a single unit will result in expedition in the handling of traffic and substantial economies in operation and accounting.

TULSA & SANTA FE.—Acquisition.—See Atchison, Topeka & Santa Fe.

VIRGINIAN.—Common Dividend.—A 4 per cent annual dividend has been declared on the common stock, payable December 31 to stock of record December 20. The initial 4 per cent dividend was declared in December, 1923.

WHEELING & LAKE ERIE.—Equipment Trust.—This company has been authorized by the Interstate Commerce Commission to issue \$2,124,000 of equipment trust certificates, including \$1,700,000 of prior lien certificates to be sold at not less than $98\frac{1}{2}$, and \$424,000 of deferred lien certificates to be sold at par.

Dividends Declared

Atlantic Coast Line.—\$2.25, quarterly, payable December 10.
Beech Creek.—\$.50, quarterly, payable January 2 to holders of record December 15.

Chicago, Indianapolis & Louisville.—Common, $2\frac{1}{2}$ per cent; preferred, 3 per cent, semi-annually; both payable January 10 to holders of record December 27.

Kansas City Southern.—Preferred, \$1, quarterly, payable January 15 to holders of record December 31.

Lehigh & Hudson River.—2 per cent, quarterly, and 2 per cent extra, both payable December 23 to holders of record December 9.

Missouri-Kansas-Texas.—Preferred (initial), \$1.25, quarterly, payable February 2 to holders of record January 15.
 Mobile & Ohio.—3½ per cent, semi-annually, payable December 30 to holders of record December 16.
 New York & Harlem.—Common and preferred, \$2.50, payable January 2 to holders of record December 15.
 Old Colony R. R.—1¼ per cent, quarterly, payable January 1.
 Philadelphia & Western.—Preferred, 1¼ per cent, quarterly, payable January 15 to holders of record December 31.
 Philadelphia & Trenton.—2½ per cent, quarterly, payable January 10 to holders of record January 1.
 Pittsburgh, McKeesport & Youghiogeny.—\$1.50, payable January 2 to holders of record December 15.
 Reading Company.—Common, 2 per cent, quarterly, payable February 12 to holders of record January 15. Second preferred, 1 per cent, quarterly, payable January 8 to holders of record December 23.
 Southern Railway.—Common, 1¼ per cent, quarterly, payable February 2 to holders of record January 10. Preferred, 1¼ per cent, quarterly, payable January 15 to holders of record January 2.

Trend of Railway Stock and Bond Prices

	Dec. 16	Last Week	Last Year
Average price of 20 representative railway stocks	80.47	79.98	59.01
Average price of 20 representative railway bonds	89.06	89.06	82.43

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Railway Officers

Executive

E. D. Winslow has been appointed assistant to the vice-president, operating department, of the Missouri-Kansas-Texas, with headquarters at Dallas, Tex., a newly created position.

F. L. Rockelman, general manager of the Detroit, Toledo & Ironton, with headquarters at Detroit, Mich., has been elected vice-president and general manager, with the same headquarters, a newly created position.

J. J. Campion, vice-president of the Carolina, Clinchfield & Ohio, with headquarters at Johnson City, Tenn., has been appointed traffic adviser to the executive board of the reorganized Clinchfield. Mr. Campion's headquarters in his new position will be at New York.

J. S. Pyeatt, president of the New Orleans, Texas & Mexico (Gulf Coast Lines), has been elected president of the newly reorganized Denver & Rio Grande Western. **William H. Williams**, chairman of the board of directors and **L. W. Baldwin**, president of the Missouri Pacific, have been elected to similar positions on the Gulf Coast Lines.

Financial, Legal and Accounting

J. W. Sanders, treasurer and auditor of the Carolina, Clinchfield & Ohio, has been appointed treasurer of the newly organized Clinchfield, with headquarters at Johnson City, Tenn. **Charles Hewitt** has been appointed general auditor, with headquarters at Johnson City.

Operating

C. F. Reynolds has been appointed trainmaster of the Norfolk Southern, with headquarters at Raleigh, N. C., succeeding **L. P. Kennedy**, promoted.

J. W. Spahr, acting general superintendent of the Denver & Salt Lake, with headquarters at Denver, Colo., has been appointed general superintendent, with the same headquarters.

A. H. Wright, assistant superintendent of the River division of the New York Central, with headquarters at Weehawken, N. J., has been promoted to superintendent, with the same headquarters.

A. E. Lock, superintendent of car service of the Toronto, Hamilton & Buffalo, has been elected chairman of the Committee on Car Service of the Railway Association of Canada for the coming year.

L. J. Podesta has been appointed superintendent of dining cars of the Alabama & Vicksburg and the Vicksburg, Shreveport & Pacific, with headquarters at Vicksburg, Miss., succeeding **F. M. Donohoe**, who has retired.

Edwin D. Jones has been appointed trainmaster of the Chicago division, Southern district, of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Fond du Lac, Wis., succeeding **Fay D. Boyd**, assigned to other duties.

K. C. Marshall, trainmaster of the Dallas division of the Southern Pacific lines in Texas, has been promoted to assistant superintendent of the Dallas division, with headquarters at Ennis, Tex., succeeding **J. K. Fahey**, who has been granted leave of absence on account of ill health. **E. E. Slagle**, chief dispatcher of the Dallas division, has been promoted to trainmaster, succeeding Mr. Marshall.

M. Fiedler, superintendent of the Globe division of the Arizona Eastern, with headquarters at Globe, Ariz., has been appointed trainmaster of the Rio Grande division of the

Southern Pacific, with the same headquarters, pursuant to the lease of the Arizona Eastern by the Southern Pacific. It was incorrectly reported in the *Railway Age* of December 13 that Mr. Fiedler had been appointed superintendent of the rail division of the Inspiration Consolidated Copper Company.

Traffic

T. M. Smith has been appointed district freight agent of the Canadian Pacific, with headquarters at Tacoma, Wash., a newly created position.

G. O. Herbert has been appointed supervisor of the newly created special service bureau of the Missouri Pacific, with headquarters at St. Louis, Mo.

James Valentine, general agent of the Wichita Falls & Southern, with headquarters at Detroit, Mich., has been transferred to Breckenridge, Tex., in the same capacity, the position of general agent at Detroit having been temporarily abolished.

E. H. Finney, commercial agent of the Seaboard Air Line, at Bradentown, Fla., has been transferred to Palmetto, Fla., a newly established office. **W. H. Stephens** has been appointed commercial agent at Sarasota, Fla., also a newly established office.

D. C. Odell, division freight and passenger agent of the Cincinnati, Indianapolis & Western, with headquarters at Springfield, Ill., has been promoted to assistant general freight agent, with the same headquarters, a newly created position, and the office of division freight agent has been abolished.

C. A. Smith, general passenger agent of the Carolina, Clinchfield & Ohio, has been appointed general freight and passenger agent of the newly organized Clinchfield, with headquarters at Johnson City, Tenn. **Theodore Dehon**, general freight agent of the Carolina, Clinchfield & Ohio, has been appointed general agent in charge of solicitation and service of the Clinchfield, with headquarters at Johnson City.

P. M. Havens, whose promotion to assistant general freight agent of the Cincinnati, Indianapolis & Western, with headquarters at Indianapolis, Ind., was reported in the *Railway Age* of November 29, was born on June 26, 1884, at Rushville, Ind. He entered railway service in 1902 as a telegraph operator and the following year was appointed a ticket clerk and operator on the Cleveland, Cincinnati, Chicago & St. Louis. He was appointed agent and operator on the Toledo, St. Louis & Western in 1906 and held that position until 1912 when he was appointed a rate clerk and telegraph operator on the Cincinnati, Hamilton & Dayton, now a part of the Baltimore & Ohio. Mr. Havens was promoted to soliciting freight agent, with headquarters at Indianapolis, Ind., in 1913. He entered the service of the Cincinnati, Indianapolis & Western in 1915 as commercial freight agent. He was later promoted to general agent, with headquarters at Indianapolis and was subsequently promoted to division freight agent, with headquarters at Indianapolis. Mr. Havens remained in the latter position until his recent promotion to assistant general freight agent.

Mechanical

J. S. Netherwood, mechanical engineer on the Southern Pacific, Louisiana lines, has been promoted to assistant superintendent of motive power and equipment of the Louisiana lines, with headquarters at Algiers, La., succeeding **B. M. Brown**, whose promotion to chief assistant superintendent of motive power of the lines in Texas and Louisiana was reported in the *Railway Age* of November 15. **C. W. Dysert** has been appointed mechanical engineer, with headquarters at Houston, Tex., succeeding Mr. Netherwood.

Engineering, Maintenance of Way and Signaling

H. C. Mann has been appointed assistant chief engineer of the Los Angeles & Salt Lake, a subsidiary of the Union Pacific, with headquarters at Los Angeles, Cal., succeeding **Arthur Maguire**, who has resigned.

Purchasing and Stores

J. C. Neph has been appointed assistant district storekeeper of the Eastern district of the Southern Pacific, with headquarters at El Paso, Tex.

A. L. Tucker, assistant general storekeeper of the Chicago & North Western, with headquarters at Chicago, has retired on pension after 45 years of service with the North Western.

R. G. Becker, division storekeeper of the Minnesota division of the Northern Pacific, with headquarters at Staples, Minn., has been transferred to the St. Paul division, with headquarters at St. Paul, Minn., succeeding **W. L. Peabody**, who has been assigned to reclamation work at Brainerd, Minn. **E. L. Cates** has been appointed acting division storekeeper of the Minnesota division, succeeding Mr. Becker.

Obituary

J. A. Corey, president of the Canadian National Railways Medical Association, which he organized six years ago, died at Vancouver, B. C., on December 8.

Samuel Gompers, president of the American Federation of Labor, died at San Antonio, Tex., on December 13, on his way home from Mexico City. He was born in England on January 27, 1850. He was a cigar maker and had been engaged in labor-unionizing activities from his boyhood. He had been president of the American Federation of Labor since 1886, except one year (1895).

Henry A. Ziesel, superintendent of the New York Central, with headquarters at Gibson, Lake county, Ind., who died on November 7, was born on May 12, 1861, at Elkhart, Ind., and entered railway service in 1873 as a messenger boy for the Lake Shore & Michigan Southern (now a part of the New York Central). He subsequently served as telegraph operator, yard clerk, assistant yardmaster and in 1892 he was promoted to general yardmaster at Elkhart. In 1902 he was promoted to superintendent of the Western division, between Chicago and Elkhart, which position he held until 1905, when he was appointed superintendent at Kankakee, Ill., of the Indiana, Illinois & Iowa and the Chicago, Indiana & Southern (now both parts of the New York Central). Mr. Ziesel was later transferred to Gibson in the same capacity and held that position until the time of his death.

William A. Newman, freight traffic manager of the New York Central, with headquarters at New York, died at a hospital there on December 13. Mr. Newman was born in Metcalfe county, Kentucky, on March 30, 1878, and was educated at the Kentucky University. He entered railway service in June, 1897, as a clerk in the general freight department of the Great Northern, remaining with that company in various positions until August, 1902, when he entered the general freight department as a clerk on the New York Central & Hudson River and the West Shore (now parts of the New York Central). In July, 1904, he was appointed traveling freight agent and in February, 1905, he was appointed chief clerk to the assistant general freight agent. He was appointed second assistant general freight agent in October, 1906, and in May of the following year he was promoted to assistant general freight agent. In January, 1911, Mr. Newman was appointed general freight agent of the Lake Shore & Michigan Southern (now a part of the New York Central) at Cleveland, Ohio, and in September of the same year he was appointed also general freight agent of the Pittsburgh & Lake Erie at Pittsburgh, Pa. He was appointed general freight agent of the New York Central, Lines East, and the West Shore in March, 1914, and in August, 1917, he was promoted to freight traffic manager of the same companies, with headquarters at New York, the position he held up to the time of his death.

GRADE CROSSING CASUALTIES on the Southern Pacific during June, July, August and September, were reduced 16.8 per cent per 1,000 registered automobiles, as compared with the same period in 1923.